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THESIS

OPINION SURVEY OF NAVAL OFFICERS
WHO HAVE RECEIVED A NAVY-
SPONSORED GRADUATE DEGREE:
A 20-YEAR PERSPECTIVE

by

Deborah M. Z. Cashman

March 1994

Thesis Co-Advisors:

Alice M. Crawford
Mark J. Eitelberg

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Opinion Survey of Naval Officers Who Have Received a Navy-Sponsored
Graduate Degree:
A 20-year Perspective

by

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Submitted in partial fulfillment
of the requirements for the degree of

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ABSTRACT

A 1973 survey of Naval officers who possess a Navy-sponsored graduate degree was reconstructed and administered in 1994 to determine officers' opinions on topics related to obtaining their degree and the utilization of their education. Results show that most officers desired to study at the 5-8 year point in their career, but did not always do so. Officers viewed graduate education as having a positive influence on personnel retention. Most respondents said that the main reason officers seek graduate education is to remain competitive with their contemporaries. Almost three-quarters of officers believed that getting a P-code is beneficial to an officer's career. Over 90 percent of officers who have served in P-coded billets thought that graduate education was necessary or desirable to perform their duties effectively. More graduates in 1994 than twenty years earlier said that the quality of their instructors is excellent. Significantly more officers in the 1994 survey said that their family and social life changed for the better when attending graduate school than did graduates in the 1973 study. The report summarizes the responses to each question and recommends further research.

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I. INTRODUCTION

The purpose of graduate education in the military is succinctly described in Department of Defense Directive 1322.10 of 31 August 1990. As stated here, graduate education should seek to accomplish two main objectives:

(1) Raise the levels of individual military officer professionalism and technical competence so that those officers more effectively perform their required duties and responsibilities, and (2) provide developmental incentives for military officers with high ability, dedication, and the capacity for professional growth to remain in the Service.¹

The importance of graduate education was endorsed by the Secretary of the Navy in an instruction dated 31 December 1974. This instruction states:

The continuing knowledge explosion and the advances in the technical, management and policy making skills all dictate a reaffirmation that graduate education is an essential element in insuring the highest level of professionalism and technical competence required in the officer corps today.²

The Navy's need for officers with graduate education to enhance mission effectiveness continues to be a primary concern. Given the importance of graduate education, the author decided to explore the attitudes and opinions of officers with Navy-sponsored graduate degrees toward earning their degree and the use of their graduate education.

¹DoD Directive 1322.10 of 31 August 1990.

²SECNAVINST 1520.4B of 31 December 1974.

A. PURPOSE OF THE STUDY

The purpose of this study is explore the opinions and attitudes of officers who have received Navy-sponsored graduate degrees. The design of the study was based on a thesis conducted in 1973 by Naval officers at the Naval Postgraduate School (NPS). A questionnaire, similar to the survey used in the 1973 study, was distributed to 1,500 active-duty officers with Navy-sponsored graduate degrees, both from NPS and civilian universities. Results of the current study are analyzed using frequencies and, where appropriate, they are compared and contrasted with the results of the 1973 survey.

B. DEFINITIONS

To prevent misinterpretations of certain words or phrases used in this thesis, the following definitions are provided.

Graduate Education - Studies beyond the bachelor's or first professional degree that are devoted to the utilization and advancement of knowledge.³

Opinion - A view, judgment, or appraisal formed in the mind about a particular matter; a generally held view.⁴

Designator - A four-digit classification device that identifies an officer's specialty.

P-code - A subspecialty code assigned to billets requiring incumbents with at least a master's level of education for optimum performance of duty.

³DoD Directive 1322.10 of 31 August 1990.

⁴From Webster's New Collegiate Dictionary (Springfield, MA: G. & C. Merriam Company, 1981).

C. ORGANIZATION OF THE STUDY

The next section of the thesis describes the background of the issue, including a discussion of the study conducted in 1973 and the development of the questionnaire. A survey conducted in September 1993, which gathered opinions of students who were then studying at NPS, is also reviewed here. Chapter III discusses the methodology used to gather data for the thesis. The chapter titled "Presentation of the Data" is an analysis of the results of the 1994 survey, with comparisons to the study conducted twenty years ago. Tables are included in that presentation. The last chapter presents conclusions and recommendations for further research. Appendix A contains the questionnaire used in this thesis. The details of the statistical computations are contained in Appendix B. Appendix C lists frequencies of the responses to each question asked, and Appendix D contains the percentage comparisons between graduates of the Naval Postgraduate School and those of civilian universities to questions regarding the uniqueness, quality, and relevance of their education.

II. BACKGROUND

A. SURVEYS OF OPINIONS TOWARD THE QUALITY OF GRADUATE EDUCATION

Graduate institutions have an ongoing need to determine the quality of their programs. These assessments are important not just for the outside agencies and organizations who make decisions that affect graduate schools, but also for the schools themselves as a method of evaluating their performance in providing quality education. While various techniques have been used in this endeavor, one of the least employed methods is the use of opinion surveys to assess the quality of graduate institutions as a whole or the quality of the individual fields of study. Whether it is due to cost, both in time and money, or for other reasons, the use of published opinion surveys has not been widespread. The following sections describe three studies used in developing this thesis.

B. AN ASSESSMENT OF QUALITY IN GRADUATE EDUCATION (1964)

In 1964, the Commission of Plans and Objectives for Higher Education (created by the American Council on Education to study long-range problems) used an opinion survey targeted at department chairmen and scholars to assess the quality of

graduate programs in the arts and sciences.⁵ The Commission found it difficult to assess the quality of graduate education because there was not a single "objective" measure of quality. Measures such as the number of faculty, size of endowment or number of books in the library, although readily quantifiable, do not truly assess quality. "Quality is someone's subjective assessment, for there is no way of objectively measuring what is in essence an attribute of value."⁶

To provide as much objectivity as possible, the Commission designed its project as a survey of informed opinion. The Commission polled people at the universities who were qualified to judge the quality of graduate curricula and institutions.

The Commission surveyed over 5,300 department chairmen, distinguished senior scholars, and knowledgeable junior scholars in 30 academic fields at 106 institutions that award doctoral degrees. The responses allowed the Commission to rate the institutions within each academic field based on (1) the perceived quality of their graduate faculty, and (2) the perceived effectiveness of their doctoral programs.

One method to evaluate the quality of graduate education is to seek the opinions of "informed" chairmen and scholars. Another method is to survey the graduates themselves. Indeed,

⁵Cartter, Allan M., An Assessment of Quality in Graduate Education, American Council on Education, 1966.

⁶Ibid, p. 4.

students, both present and past, are the "customers" of graduate institutions. The next two sections describe opinion surveys targeted to graduate students who have, or are currently pursuing, a Navy-sponsored graduate degree.

C. OPINION SURVEY OF GRADUATES CONDUCTED IN 1973

In 1973, Lieutenant Commander Cecil R. Hurst and Lieutenant James D. Shaddix, students at the Naval Postgraduate School (NPS), conducted a study to assist the Navy Graduate Education Study Committee, which was instituted by the Superintendent of NPS in 1971. The Committee's goals were stated as follows:

(1) to determine the role of graduate education in preparing the professional Naval Officer for the challenges of the future, (2) to study current and proposed career management policies and procedures to determine how best to integrate graduate education into Naval Officer career patterns and (3) to recommend educational restructuring that will enhance the effectiveness of the Naval Postgraduate School in meeting future Navy graduate education objectives.⁷

A questionnaire was developed to assist the Committee in meeting its obligations. The questionnaire was designed to obtain the following information:

- (1) The period of time in a Naval officer's career that he or she should study for a graduate degree.
- (2) The length of time that graduate officers intend to remain in the Navy.
- (3) The influence that the availability of graduate education had upon the officer's career decision.

⁷Naval Postgraduate School Notice 1520 of 25 October 1971.

- (4) The reasons officers seek graduate education.
- (5) Opinions as to the consideration that selection boards should give to officer students' fitness reports.
- (6) Designator changes as a result of graduate education.
- (7) Recommendations concerning the P-coding system.
- (8) The effect of obtaining a P-code upon an officer's career.
- (9) Utilization of graduate education in P-coded and other billets.
- (10) If and when the graduate was assigned to P-coded billets.
- (11) Opinions as to the length of time until officers educated in technical areas become technologically obsolete unless assigned to a billet in that area or maintain currency on an individual basis.
- (12) Methods by which officers have kept current in the technological curriculum in which they studied.
- (13) Opinions as to the effect of graduate education upon promotion.
- (14) The curriculum studied as compared with the preferred curriculum.
- (15) A comparison of NPS and civilian schools graduates' opinions concerning curriculum structure, school administration, academic difficulty, instructor and course excellence, and whether more officers would have preferred to attend NPS or civilian schools.⁸

A pilot questionnaire was distributed to 150 graduates, and a large study survey was developed based on the responses from the pilot survey. The respondents were forced to state an opinion regarding each question ("no opinion" responses

⁸Hurst, Cecil R., and Shaddix, James D., *Opinion Survey of Naval Officers Who Have Received a Navy Sponsored Graduate Degree*, Master's Thesis, Naval Postgraduate School, Monterey, California, June 1973.

were not permitted). A comment sheet was also provided in the 1973 survey. Punch cards were used to record answers to the questions in order to optically scan the responses.

The population of officers with Navy-sponsored graduate degrees as of December 1972 was determined to be 5,065. Approximately 57 percent (2,917) attended NPS, and 2,148 attended civilian universities (CIVINS). The authors of the original study decided to send surveys to 25 percent of the total population to ensure statistical significance, and 1,265 surveys were mailed.

In 1973, 826 surveys were returned, resulting in a return rate of 65.3 percent. Table I shows the numbers and

TABLE I TOTAL POPULATION AND SAMPLE FOR THE 1973 SURVEY OF NAVAL OFFICERS, BY RANK

RANK	Total Population		Sample	
	Number	Percentage	Number	Percentage
LTJG	122	2.4	14	1.7
LT	581	11.5	60	7.3
LCDR	1,863	36.8	310	37.5
CDR	1,568	30.9	252	30.5
CAPT	832	16.4	171	20.7
RADM	89	1.8	17	2.1
VADM	10	0.2	2	0.2
Total	5,065	100.0	826	100.0

Source: Hurst and Shaddix

percentages of the eligible population and of the responses received (sample), identified by rank.

An analysis of the survey results was presented in the 1973 thesis. The results showed the following:

(1) Most Naval officers (70.9 percent) with a graduate degree believed a graduate education should be obtained during the 5-8 year point in their career, whereas only 38.6 percent actually attended graduate school during this period.

(2) Attending graduate school was seen as a positive influence on officer retention.

(3) Most Naval officers said "to remain competitive with contemporaries for further assignments and promotions" was the main reason for seeking graduate education.

(4) Most officers believed fitness reports for full-time graduate students should not be viewed by promotion boards as equivalent to fitness reports from operational or shore billets.

(5) Graduates from NPS generally considered their education as equivalent to that of civilian universities; but civilian school graduates generally considered their school to be superior to NPS.

(6) The proportion of graduate-degree-holders that have been assigned to a P-coded billet was 68 percent, with restricted line and staff corps having significantly more officers assigned to P-coded billets during the course of their career.

D. SURVEY OF ATTITUDES TOWARD THE NAVAL POSTGRADUATE SCHOOL (SEPTEMBER 1993)

In an attempt to determine officers' opinions toward the uniqueness, quality, and relevance of NPS, the Dean of Instruction at NPS sponsored an attitude survey of officer students attending the school in September 1993. The survey was designed to ascertain the "degree to which students feel

that uniqueness, quality, and relevance are achieved at NPS."⁹ The survey included a number of demographic items, such as branch of service, curriculum, designator, rank, and length of time (quarter) in graduate program. The questions were divided into three sections and employed a 5-point scale to measure the extent to which the student believed the element was present at NPS.

With 1,385 responses returned, the study found that the uniqueness of NPS--or the extent to which a civilian university would not be able to match NPS--was perceived to be high. NPS was seen to be unique in being able to provide Department of Defense (DoD) publications, DoD-oriented databases, computer models and simulations, DoD-oriented courses, as well as an environment where military officers benefit from a shared knowledge of their fellow students' expertise.

The quality of selected items at NPS was also found to be high. These items included core courses, elective courses, faculty, library resources, and personnel support, including military exchanges and family services.

Finally, the survey found that the respondents overwhelmingly (approximately 75 percent) believed that their NPS graduate degree is relevant. The majority stated that an

⁹Lawry, Gordon, II, and Ford, Dan, "Survey of Attitudes Toward the Naval Postgraduate School", paper submitted to Seminar in Manpower Analysis (MN4119) class, Naval Postgraduate School, Monterey, California, September 1993.

NPS education benefits officers for the remainder of their career and prepares them for assignment to DoD. Over 50 percent either agreed or strongly agreed that their NPS education increases the combat effectiveness of their military service.

The use of a 5-point scale and the division of items into uniqueness, quality, and relevance is likewise employed in this thesis.

III. METHODOLOGY

A. QUESTIONNAIRE

As discussed previously, the original questionnaire was designed in 1973 by conducting a pilot survey and then developing a forced-answer survey based on responses to the pilot survey. Since the premise of the current study is to reconstruct the original survey, analyze the results, and make comparisons with the 1973 survey, the original questionnaire was not evaluated as to its content or structure. An essentially identical survey instrument was required to make comparisons between the 1973 and 1994 studies.

Three additional sections consisting of 20 questions were added to the original questionnaire. These questions were derived from the survey on "uniqueness, quality, and relevance" given to students at the Naval Postgraduate School in September 1993, as described in the previous chapter.

The respondents were assured that any information derived from this study would be held in strict confidence and used for research purposes only. This would hopefully allow for candid and sincere answers.

A copy of the reconstructed survey is presented in Appendix A. The actual questionnaire used for this study was

formatted to remain under four pages, thereby minimizing mailing costs.

B. SAMPLING TECHNIQUE

The Officer Master File (OMF) was used to determine the population of officers with Navy-sponsored graduate degrees. The OMF was dated October 1993, but did not include NPS graduates from the September 1993 graduation class. The database variable titled "Education--Sponsor" is defined by the Manual of Navy Officer Classifications (NAVPERS 15839) as "a one-character alpha code used to identify Navy-sponsored graduate or advanced courses and special programs." All Naval officers with Navy-sponsored graduate or advanced courses, as opposed to independently-attained degrees, were identified. After culling the database of separated officers, it was determined that the population of Navy-sponsored graduate-degree-holders for use in this study was 7,176.

Information was also gathered on the source of the Navy-sponsored graduate degree. Approximately 20.8 percent of the total eligible population attended a civilian university in the 1994 survey. This compares with 42.4 percent of the population in the 1973 survey. Conversely, almost 79.2 percent attended NPS in the 1994 survey, as opposed to 57.6 percent in the 1973 study.

The population was divided by source of degree and sorted by rank, and a subset of 1,500 officers (20.9 percent of the

total population) was identified to receive the questionnaire. The random sample was identified by using the SPSS For Windows (Release 6)¹⁰ software and by extracting the specified number of cases from the database.

Answer forms were included with the questionnaires, in addition to a pre-paid return envelope. SCANTRON¹¹ answer forms were used to allow for optical scanning of the responses. The SCANTRON form allowed for only five answers per question and caused the questionnaire to be somewhat awkward in its format. A few respondents remarked on the difficulty of the survey, although the vast majority completed it properly.

The surveys were mailed on 22 December 1993. Respondents were asked to return the surveys by 1 February 1994 to allow for holiday leave periods and still provide enough time for analysis of the data. Returns were accepted for inclusion into this study until 2 March 1994.

C. OVERVIEW OF RESPONDENTS

Of the 1,500 questionnaires mailed, 964 responses were returned and used in this analysis. An additional 90 surveys were returned due to an incorrect address. Thus, 68.4 percent

¹⁰Norusis, Marija J., SPSS for Windows: Base System User's Guide, Release 6, SPSS Inc., 1993.

¹¹SCANTRON Corporation, 1361 Valencia Ave., Tustin, California, 92680.

(964 out of 1,410) of the surveys that reached their destination were answered and returned.

Table II (similar to Table I) shows the distribution by rank of the total population of officers who held a Navy-sponsored graduate degree as of October 1993. The table also shows the corresponding distribution of the respondents to the survey, identified by rank.

TABLE II TOTAL POPULATION AND SAMPLE FOR THE 1994 SURVEY OF NAVAL OFFICERS, BY RANK

RANK	<u>Total Population</u>		<u>Sample</u>	
	Number	Percentage	Number	Percentage
ENS	1	0.0	0	0.0
LTJG	3	0.0	0	0.0
LT	1,404	19.6	147	15.2
LCDR	2,502	34.9	344	35.7
CDR	2,120	29.5	306	31.7
CAPT	1,046	14.6	143	14.8
RADL	42	0.6	10	1.0
RADM	43	0.6	13	1.3
VADM	12	0.2	1	0.1
Total	7,173	100.0	964	100.0

The rank that is least represented in the survey sample is Vice Admiral, with one person (representing only 8.3 percent) from the eligible population. Of the ranks with larger populations, Lieutenant is represented in the sample by only 10.5 percent of its total population. The standard error for

representation of Lieutenants is ± 7.6 percent.¹² This under-representation may be due to the type of operational billets to which most Lieutenants are assigned. Extensive deployment schedules may have prevented surveys from reaching them or responses from returning.

As seen in Tables I and II, Lieutenant Commanders represent the largest percentage of both the population and the survey in 1973 and 1994. Overall, the population of officers with Navy-sponsored graduate degrees has increased by 41.7 percent between 1973 and 1994, with Lieutenants accounting for most of the increase (142 percent increase in the Lieutenant population). However, the number of Lieutenant (Junior Grade) officers has declined substantially, decreasing by almost 98 percent.

The responses to the survey are examined in the following chapter. All evaluation was completed using the SPSS software system and by conducting frequency calculations and cross-tabulations. In addition, tests were conducted to indicate statistical significance in the difference between proportions of two independent populations and to determine confidence levels of responses.

¹²Appendix B(1).

IV. PRESENTATION OF THE DATA

A. DETAILED ANALYSIS OF RESPONSES

This section is divided according to the topics (or questions) contained in the survey. Tables are presented for each question and all tables contain information from the 1994 survey, only. Responses are also analyzed by officer designator community and rank, and the results are presented if they are significant or of interest. Comparisons are made between the current study and the survey completed in 1973.

All percentages are within ± 3 percentage points unless otherwise noted. Appendix B contains the detailed statistical calculations used for determining statistical significance in this thesis. Appendix C lists each questions and the percentage responses.

As with any anonymous survey, the responses are only as valid as the respondents intend them to be. Mistakes may have been made by the respondents in understanding the question, answering the survey, using the answer sheet, and so on. Some respondents may also provide intentionally false answers, which can occur on any survey. With this in mind, the data are presented in the following sections.

1. When Should a Naval Officer Study for a Graduate Degree?

Table III shows the responses to the combined questions 5 and 6 of the survey, which defined at what career point an officer received his or her last graduate degree, and the combined questions 7 and 8, which are the opinions of when an officer should study for a graduate degree.

TABLE III COMPARISON OF YEARS IN WHICH DEGREE WAS RECEIVED WITH OPINIONS OF WHEN OFFICERS SHOULD RECEIVE A DEGREE

Years of Commissioned Service (YCS)	<u>Received Degree</u>		<u>Should Receive Degree</u>	
	n	Percent	n	Percent
1-4	97	10.2	22	2.3
5-6	163	17.1	353	37.1
7-8	270	28.3	341	35.7
9-10	161	16.9	171	17.9
11-12	132	13.8	54	5.7
13-14	71	7.4	8	0.8
15-16	21	2.2	3	0.3
17-18	16	1.6	1	0.1
19 on	24	2.5	1	0.1
Total	955	100.0	954	100.0

Almost three quarters (72.7 percent) of the survey respondents said that a Naval officer should study for a graduate degree at a point between five and eight years of his or her commissioned service (YCS). However, only 45.4 percent

of the respondents actually attended school during this period. This is very similar to the results of the 1973 survey, where 70.9 percent said that graduate study should be between five and eight YCS. At the same time, the proportion of officers who studied at the five through eight YCS mark (45.4 percent) in the 1994 survey is greater than the proportion (38.6 percent) who did in the 1973 study. It appears that more officers are currently studying at their preferred YCS.¹³

2. Length of Career Intentions

Question 9 of the survey asked officers how long they intended to remain in the Navy. More than nine out of ten officers (92.5 percent) said they intended to remain 20 years or longer. Of this group, 24.6 percent said they intended to remain 26 years or longer. However, since the respondents are relatively senior--28.9 percent of all respondents have completed 19 or more YCS--more insight can be gained by looking at the junior officers. Table IV shows that, of the officers with eight or less YCS, 80.5 percent (± 7.98)¹⁴ intended to stay in the Navy 20 years or more. The proportion of officers who intended to continue for at least 20 years is even higher (83.9 percent, ± 4.99) when the group is expanded to include those with 10 years or less of commissioned

¹³Appendix B(2).

¹⁴Appendix B(3).

TABLE IV COMPARISON OF CAREER INTENTIONS WITH YEARS OF COMMISSIONED SERVICE (YCS) COMPLETED

YCS	CAREER INTENTIONS (Percent)					Total	
	Complete Obligation	20	20-26	26+	Row %	%	n
1-4	0.0	60.0	40.0	0.0	100.0	0.5	5
5-6	22.2	11.1	55.6	11.1	100.0	0.9	9
7-8	20.6	36.8	29.4	13.2	100.0	7.1	68
9-10	13.3	41.8	34.7	10.2	100.0	10.3	98
11-12	6.7	37.8	46.6	8.9	100.0	9.3	90
13-14	4.7	40.6	46.0	8.7	100.0	15.6	150
15-16	11.4	33.6	44.3	10.7	100.0	13.7	132
17-18	9.8	24.1	51.1	15.0	100.0	13.8	133
19 on	0.7	7.9	39.6	51.8	100.0	28.8	278
Total	7.5	27.3	42.4	22.8		100.0	962

service. These results essentially mirror the 1973 survey.

3. Influence of Graduate Education on Retention

Question 10 asked whether the availability of graduate education had a positive or negative influence, or had no effect on the officer's decision to remain in the Navy. Approximately four out of five respondents (79.7 percent) said that graduate education had a positive influence on their decision to remain. Of the officers who said graduate education had a positive influence, 93.6 percent intended to stay 20 years or longer. There was no significant difference in the proportion of officers saying that graduate education had a positive influence between officers who attended NPS

(79.2 percent) and those who attended civilian universities (80.8 percent).

Table V compares the influence of graduate education

TABLE V COMPARISON OF THE INFLUENCE OF GRADUATE EDUCATION AND YCS WHEN GRADUATED

YCS at graduation	CAREER INFLUENCE (Percent)			Row %	Total %
	Positive	Negative	No Effect		
1-4	77.3	0.0	22.7	100.0	10.2
5-6	79.1	1.2	19.6	100.0	17.1
7-8	81.4	0.0	18.6	100.0	28.2
9-10	88.8	0.0	11.2	100.0	16.9
11-12	78.8	0.0	21.2	100.0	13.9
13-14	64.8	0.0	35.2	100.0	7.5
15-16	71.4	0.0	28.6	100.0	2.2
17-18	68.8	0.0	31.3	100.0	1.7
19 on	78.3	0.0	21.7	100.0	2.4
Total (%)	79.7	0.2	20.0		100.0
Total (n)	760	2	191		953

and the years of commissioned service completed at the last graduate degree. The positive influence of graduate education increases as the YCS at graduation increases, up until the 10-year-point, then decreases erratically as the YCS increases.

4. Reasons Naval Officers Seek Graduate Education

The highest percentage of respondents (41 percent) believed that the primary reason most Naval officers seek graduate education (question 11) is "to remain competitive with their contemporaries for further assignment and promotion." Some people call this "ticket punching." Table VI describes the opinions of officers in each paygrade toward

TABLE VI REASONS FOR SEEKING GRADUATE EDUCATION, BY RANK

Reason	LT	LCDR	CDR	CAPT	RADL through VADM	Total	n
Remain Competitive	38.4	43.3	41.9	38.7	25.0	41.0	390
More Capable	13.7	18.1	28.7	32.4	29.1	23.2	221
Get P-code	3.4	5.3	5.6	6.3	4.2	5.3	50
Job after USN	19.9	8.9	4.3	2.1	4.2	8.0	76
Personal Desires	24.7	24.3	19.5	20.4	37.5	22.5	215
Column Total	100.0	100.0	100.0	100.0	100.0		
Total	15.2	35.8	31.7	14.8	2.5	100.0	952

question 11 of the survey. When analyzing the trends based on rank, if we look at the answers from Lieutenants through Captains (officers in paygrades O7 through O9 represent only 2.5 percent of the respondents), the proportion of respondents who believed that most officers seek graduate education to "become a more capable Naval officer" increases as rank increases (similar to results in 1973). However, the

proportion of officers who said "to increase employment opportunities upon retirement" decreases from Lieutenant to Captain.

The least popular reason given, with only 5.3 percent, is "to procure a P-code." However, this is still considerably more than the 0.8 percent who gave that answer in 1973.¹⁵

When investigating whether the source of the graduate degree affects the officer's opinions of question 11, both the graduates of NPS and the graduates of civilian universities (CIVINS) said "ticket punching" was the primary reason. However, significantly more NPS graduates (24.2 percent) than CIVINS graduates (14.1 percent) said that officers seek graduate education "to fulfill personal education aspirations." More CIVINS graduates (31.2 percent) than NPS graduates (21.3 percent), indicated that "to become a more capable officer" is the primary reason.¹⁶

5. Choice of Curriculum Selection

Question 14 asked if the officer's graduate curriculum was the officer's choice. Fully 80.7 percent said the curriculum was their choice. This is statistically different from the proportion of officers in 1973 (86.8 percent) who chose their curriculum.¹⁷

¹⁵Appendix B(4).

¹⁶Appendix B(5).

¹⁷Appendix B(6).

Table VII shows that significantly more CIVINS

TABLE VII CHOICE IN CURRICULUM BY SOURCE OF GRADUATE DEGREE

Curriculum Choice	Attended NPS		Attended CIVINS		All Respondents	
	n	%	n	%	n	%
YES	599	78.5	177	88.9	776	80.7
NO	164	21.5	22	11.1	185	19.3
Total	763	100.0	199	100.0	961	100.0

graduates (88.9 percent) chose their curriculum, as opposed to NPS graduates (78.5 percent).¹⁸ The following curricula were found to have the highest amount of "choice" (at 100 percent) among the officers: Chemistry, Nuclear Power Engineering, Petroleum Management, Marketing, Mathematics, Ocean Law and Subsistence Technology. These were followed by Intelligence (95.7 percent "choice"), Education (93.8 percent), Communication Engineering (92.3 percent), Naval Construction Engineering (91.8 percent), and Financial Management (91.1 percent).

6. Fitness Reports for Graduate Students

The number one (48.6 percent) response to question 20 ("How should selection boards for promotion view fitness reports for full-time graduate students?") was "not observed,

¹⁸Appendix B(7).

submitted for record purposes only." As an officer becomes more senior, as shown in Table VIII, progressively more

TABLE VIII FITNESS REPORT CONSIDERATION, BY RANK

FITREP	LT	LCDR	CDR	CAPT	RADL through VADM	Total	
						%	n
Equivalent to Oper./ Shore	21.2	20.3	13.4	9.2	16.7	16.5	159
Special Assignment, Emphasis on Ratings	16.4	14.8	16.1	15.5	12.5	15.5	149
Special Assignment, Emphasis only on GPA	17.8	18.9	22.0	17.6	12.5	19.4	186
Not Observed	44.6	46.0	48.5	57.7	58.3	48.6	467
Column Total	100.0	100.0	100.0	100.0	100.0		
Total	15.2	35.8	31.7	14.8	2.5	100.0	961

officers (from Lieutenant to Captain) believed student fitness reports should be "not observed" while progressively less said that fitness reports should be equivalent to those of operational or shore billets.

When comparing the promotion status of the respondents with their opinions on fitness reports, only 39 percent (± 9.8 percent)¹⁹ of the officers who failed for promotion stated that fitness reports should be "not observed." Of

¹⁹Appendix B(8).

officers who felt that graduate education had a detrimental effect on their selection (or rejection) for promotion, fully 70.7 percent (\pm 10.9 percent)²⁰ said the fitness report should be an observed report of some type. (See Subsection 17 of this chapter, Graduate Education and Promotion.)

When compared with results in 1973, only 28.8 percent of the respondents desired "not observed" fitness reports. However, the number-one answer in 1973 (35.4 percent) was to treat fitness reports as "special assignment, with little emphasis on the professional rating assigned."

7. Designator Changes

In response to question 22, the majority of all respondents (86.2 percent) did not have their designator changed after receiving their graduate degree. Table IX shows

TABLE IX DESIGNATOR CHANGE BY OFFICER COMMUNITIES

Changed Designator	COMMUNITIES (Percent)			Total	
	URL	RL	STAFF	n	%
YES	1.9	48.9	2.7	122	14.1
NO	98.1	51.1	97.3	746	85.9
Total	100.0	100.0	100.0	868	100.0

the distribution among officer communities and whether they had their designator changed as a result of their studies.

²⁰Appendix B(9).

The Restricted Line (RL) community represents the largest proportion (88.5 percent)²¹ of officers who had their designator changed. The Unrestricted Line (URL) and Staff communities continue to represent small percentages. These results mirror those of the 1973 survey. (Note that the percentage for individual communities differs from the percentage from all respondents due to answers with missing designators.)

8. Attitudes Toward School Attended

Questions 12 and 13 were used to divide the population of respondents into those who attended NPS and those who studied at CIVINS. In this manner, the attitudes and opinions of officers regarding their educational experience can be linked to the type of scholarship they obtained (i.e., military or civilian).

Nearly four out of five respondents (79.4 percent) attended NPS, while the remainder (20.6 percent) attended civilian universities. These percentages closely match the 79.2 percent NPS graduates and 20.8 percent from civilian universities found in the general officer population at the time of the survey. These numbers differ significantly from the percentages in 1973, where 42.4 percent of the officer population attended CIVINS and 57.6 percent attended NPS.

²¹Appendix B(10).

The following sections describe in detail the differences in opinion between NPS graduates and CIVINS graduates on various aspects of their education.

a. Preference for Naval Postgraduate School or Civilian University

The majority of officers who attended NPS (57.6 percent) considered it equivalent to a civilian university, while the majority of CIVINS graduates (67.5 percent, ± 6.0)²², as shown in Table X, believed their

TABLE X OPINIONS OF NAVAL POSTGRADUATE SCHOOL AND CIVILIAN UNIVERSITY GRADUATES TOWARD THEIR SCHOOL

Attitude Toward School Attended	<u>NPS Graduates</u>		<u>CIVINS Graduates</u>	
	n	Percent	n	Percent
Superior to other school	224	29.3	135	67.5
Equivalent to other school	441	57.6	54	27.0
Would have preferred other school	100	13.1	11	5.5
Total	765	100.0	200	100.0

university was superior to NPS. The difference in the proportion is statistically significant at the 95 percent confidence level.²³ It is important to note, however, that

²²Appendix B(11).

²³Appendix B(12).

significantly more NPS graduates in 1994 (29.3 percent) believed that NPS was superior to a civilian university than did in 1973 (16.8 percent).²⁴ However, the proportion of CIVINS graduates (67.5 percent) in 1994 who thought their school was superior to NPS did not differ significantly from the proportion in 1973 (72.4 percent).²⁵

b. Curriculum Structure

Significantly more CIVINS graduates (74.9 percent, ± 5.6)²⁶ than NPS graduates (55.8 percent)²⁷ considered the structure of their curriculum at their university either well balanced or broadly structured allowing for many electives (rather than narrowly structured). The responses to question 15 can be seen in Table XI.

Among the curricula considered narrowly structured (allowing for few electives) by officers who attended NPS were Economics, Hydrographic Engineering, Naval Construction Engineering and Subsistence Technology (all officers in these curricula said they were narrowly structured). For officers who attended CIVINS, the courses considered narrowly structured included Computer Science, Computer Science Systems Management, Aeronautical Engineering, Hydrographic

²⁴Appendix B(13).

²⁵Appendix B(14).

²⁶Appendix B(15).

²⁷Appendix B(16).

TABLE XI COMPARISON OF OPINIONS ON CURRICULUM STRUCTURE BETWEEN NAVAL POSTGRADUATE SCHOOL AND CIVILIAN UNIVERSITY GRADUATES

Curriculum Structure	<u>NPS Graduates</u>		<u>CIVINS Graduates</u>	
	n	Percent	n	Percent
Broadly structured	75	9.8	47	23.6
Narrowly structured	337	44.3	50	25.1
Well Balanced	350	45.9	102	51.3
Total	762	100.0	199	100.0

Engineering, Operations Research and Public Relations, all at 100 percent responses.

When compared with the results from twenty years ago, the proportion of NPS graduates in 1994 who said their curriculum was narrowly structured (44.3 percent) was significantly less than the proportion who thought so in 1973 (51.5 percent).²⁸ However, the proportion of CIVINS graduates in 1994 who said their curriculum was narrowly structured (25.1 percent) was not statistically different from the proportion saying so in 1973 (31.3 percent).²⁹

c. School Administration

Table XII, which corresponds to question 16, shows that there was no statistical difference between the proportions of NPS and CIVINS graduates who thought their

²⁸Appendix B(17).

²⁹Appendix B(18).

TABLE XII COMPARISON OF OPINIONS ON SCHOOL ADMINISTRATION BETWEEN NAVAL POSTGRADUATE SCHOOL AND CIVILIAN UNIVERSITY GRADUATES

School Administration	NPS Graduates		CIVINS Graduates	
	n	Percent	n	Percent
Very efficient and helpful	272	35.6	103	51.8
Efficient and helpful	472	61.9	91	45.7
Inefficient and uncooperative	19	2.5	5	2.5
Total	763	100.0	199	100.0

school administration was efficient and helpful to some extent (97.5 percent). Nevertheless, significantly more CIVINS graduates (51.8 percent) than NPS alumni (35.6 percent) believed their school administration was very efficient and helpful.³⁰

Significantly more NPS graduates in 1994 (35.6 percent) stated the administration was very efficient and helpful than did those in 1973 (26.4 percent).³¹ The same cannot be said about the responses of the CIVINS graduates, as they did not differ significantly between 1973 and 1994.

d. Academic Difficulty

The majority of both NPS and CIVINS graduates stated that the academic difficulty (question 17) of their graduate education was about what they had anticipated. Table

³⁰Appendix B(19).

³¹Appendix B(20).

XIII shows that the percentage for each category was similar between the two sources of degrees.

TABLE XIII COMPARISON OF OPINIONS ON ACADEMIC DIFFICULTY BETWEEN NAVAL POSTGRADUATE SCHOOL AND CIVILIAN UNIVERSITY GRADUATES

Academic Difficulty	<u>NPS Graduates</u>		<u>CIVINS Graduates</u>	
	n	Percent	n	Percent
As anticipated	483	63.1	124	62.7
Less than anticipated	106	13.9	29	14.6
More than anticipated	176	23.0	45	22.7
Total	765	100.0	198	100.0

Among the curricula considered more difficult than anticipated at NPS were Naval Construction Engineering and Acoustics Engineering. At CIVINS, curricula considered more difficult were Aeroelectronics, Personnel Management, Operations Research, and Retailing.

The percentages in 1994 do not differ significantly (at the 95-percent confidence level) from the 1973 results, although the percentage of CIVINS graduates who say the academic difficulty was more than anticipated increases somewhat from 16.8 percent to 22.7 percent in 1994.

e. Instructor and Course Excellence

Table XIV describes the percentage of responses received when the officers were asked what proportion of the

instructors and courses they considered "excellent" (questions 18 and 19). The differences between the percentage categories

TABLE XIV COMPARISON OF OPINIONS ON INSTRUCTOR AND COURSE EXCELLENCE BETWEEN NAVAL POSTGRADUATE SCHOOL AND CIVILIAN UNIVERSITY GRADUATES

Percent Excellent	<u>INSTRUCTORS</u>				<u>COURSES</u>			
	<u>NPS</u>		<u>CIVINS</u>		<u>NPS</u>		<u>CIVINS</u>	
	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>
More than 90%	161	21.0	79	39.7	140	18.3	75	37.7
About 75%	381	49.8	79	39.7	426	55.7	90	45.2
About 50%	154	20.1	28	14.1	159	20.8	24	12.1
About 25%	59	7.7	8	4.0	37	4.8	8	4.0
Less than 10%	10	1.3	5	2.5	3	0.4	2	1.0
Total	765	100.0	199	100.0	765	100.0	199	100.0

between NPS and CIVINS graduates in both instructor and course excellence were significant for categories above 50 percent.

To define a mean percentage, we will consider "more than 90 percent" to be equal to 95 percent, and "less than 10 percent" equal to 5 percent. Hence, NPS graduates consider 69.3 percent of their instructors to be excellent, whereas CIVINS graduates consider 75.7 percent excellent. The mean percentage of courses considered excellent by NPS graduates was 70.8 percent, whereas CIVINS considered 76.8 percent excellent. Neither difference is statistically significant at the 95-percent confidence level.

Significantly more NPS graduates (21 percent) felt that greater than 90 percent of their instructors were excellent than did graduates surveyed 20 years ago (7 percent).³² In addition, significantly more CIVINS graduates (39.7 percent) in 1994 said that more than 90 percent of their instructors were excellent than did CIVINS graduates in 1973 (25.3 percent).³³

When asked about the excellence of courses at their school, there is no significant difference between the officers who considered more than 90 percent of the courses as excellent between the 1994 and 1973 surveys, either at CIVINS or NPS. Nor is there a statistically significant difference in any of the other categories.

f. Social/Family Life as a Graduate Student

When asked to describe the change to their family or social life (in question 21) while attending graduate school (Table XV), the majority of all officers (graduates of NPS and CIVINS combined at 64.8 percent) said their life changed to some extent for the better, compared to life at a "normal" tour. Slightly more NPS graduates (33.7 percent) than CIVINS graduates (26.9 percent) said that it changed significantly for the better; however, the difference is not

³²Appendix B(21).

³³Appendix B(22).

TABLE XV COMPARISON OF OPINIONS ON CHANGES TO FAMILY AND SOCIAL LIFE BETWEEN NAVAL POSTGRADUATE SCHOOL AND CIVILIAN UNIVERSITY GRADUATES

Change to Family/Social Life	<u>NPS Graduates</u>		<u>CIVINS Graduates</u>	
	n	Percent	n	Percent
Significantly for the Better	257	33.7	53	26.9
Somewhat for the Better	239	31.4	72	36.5
Somewhat for the Worse	143	18.8	46	23.4
Significantly for the Worse	52	6.8	11	5.6
Little or No Effect	71	9.3	15	7.6
Total	762	100.0	197	100.0

statistically significant.³⁴ In addition, slightly more CIVINS graduates said their life had changed for the worse to some degree (29 percent) than did NPS graduates (25.6 percent), but the difference is also not significant.

In analyzing possible causes of the changes in family or social life, Table XVI shows the comparison between academic difficulty perceived and the change to the officer's life. It appears that, for those graduates who felt that the academic difficulty was more than they had anticipated, their family and social life also changed for the worse to some extent. However, the officers who thought that the difficulty was less than anticipated believed their family and social

³⁴Appendix B(23).

TABLE XVI COMPARISON OF CHANGES TO FAMILY OR SOCIAL LIFE WITH PERCEIVED ACADEMIC DIFFICULTY (NAVAL POSTGRADUATE SCHOOL AND CIVILIAN UNIVERSITY GRADUATES)

Academic Difficulty	CHANGE TO FAMILY/SOCIAL LIFE					
	WORSE		NO EFFECT		BETTER	
	NPS	CIVINS	NPS	CIVINS	NPS	CIVINS
More than Anticipated	44.9	55.5	8.5	6.7	46.6	37.8
As Anticipated	22.3	21.7	9.6	8.9	68.2	69.3
Less than Anticipated	8.6	17.8	9.5	3.6	81.9	78.6

life changed for the better.

When compared with the results twenty years ago, the topic brought the most startling differences. The number-one answer in 1973, for both NPS and CIVINS graduates, was a change for the worse to some extent (53 percent), whereas graduates today believe situations have changed for the better.

9. Value of a P-Code to an Officer's Career

The majority of officers (74 percent) believed that getting a P-code commensurate with graduate education is beneficial to an officer's career, and only 2.6 percent thought it was detrimental, according to question 24. However, significantly more CIVINS graduates (82.3 percent) than NPS graduates (72 percent) thought that getting a P-code was beneficial.³⁵

³⁵Appendix B(24).

Table XVII divides the respondents into those who have

TABLE XVII COMPARISON OF OPINION ON BENEFIT OF P-CODE WITH ASSIGNMENT TO P-CODED BILLET

Getting a P-code	<u>Assigned</u>		<u>Never Assigned</u>		<u>Total</u>	
	n	%	n	%	n	%
Beneficial	490	78.5	213	65.7	707	74.0
No effect	117	18.8	103	31.8	223	23.4
Detrimental	17	2.7	8	2.5	25	2.6
Total	624	100.0	324	100.0	961	100.0

been assigned to one or more P-coded billets in the area of their graduate education and those who have not. Significantly more officers who have been in P-coded billets believed a P-code in that specialty was beneficial to their career than did those who never worked in their graduate education field.

Approximately 52 percent of the officers in 1973 said that getting a P-code was beneficial to their career. This is significantly lower than the 74 percent in 1994 who believed it was beneficial.³⁶

10. Necessity of Graduate Education in P-coded Billets

Combined questions 25 and 26 were used to determine the officers' perceptions of how important graduate education was to effectively perform duties in P-coded billets they have

³⁶Appendix B(25).

held. Table XVIII shows that 90.6 percent of officers who

TABLE XVIII OPINION AS TO NEED OF GRADUATE EDUCATION IN P-CODED BILLETS

Need for Graduate Education in P-coded Billets	n	Percent
Graduate Education in Specialty necessary	275	39.2
Graduate Education in Specialty desired	302	43.0
Any Graduate Education necessary	24	3.4
Any Graduate Education desired	35	5.0
Undergraduate Education in Specialty effective	49	7.0
Any Undergraduate Education effective	17	2.4
Total	702	100.0

have been assigned to a P-coded billet thought that graduate education was necessary or desirable to perform their duties effectively. Those who said graduate education in that particular specialty, whatever it was, was necessary or desirable amounted to 42.6 percent of officers who had been in those billets. This is significantly more than the 32 percent who gave that response in 1973.³⁷

³⁷Appendix B(26).

11. Utilization of Graduate Education in Other Than P-Coded Billets

Question 27 provides information on the extent to which graduate education is used in billets other than ones in which a specialty is required. Fully 82.1 percent of officers with a Navy-sponsored graduate degree have used their graduate education to some extent in other than P-coded billets. Almost half of the officers have used their graduate education frequently or extensively in other billets. Table XIX

TABLE XIX COMPARISON OF THE USE OF GRADUATE EDUCATION IN OTHER THAN P-CODED BILLETS, BY RANK

Use of Graduate Education	LT	LCDR	CDR	CAPT	RADL through VADM	Total	
						%	n
Extensively	7.7	15.2	21.8	22.0	33.3	17.7	167
Frequently	29.4	28.1	33.3	38.3	41.7	31.8	301
Occasionally	30.8	32.2	34.7	33.3	20.8	32.7	309
Never	32.2	24.5	10.2	6.4	4.2	17.9	169
Total	100.0	100.0	100.0	100.0	100.0	100.0	946

suggests that the proportion of officers who use their graduate education extensively or frequently increases as the officer rises through the ranks.

12. Desirability of P-Coded Billets

According to the responses to question 28, over half (54.9 percent) of the officers have been assigned to one or more P-coded billets in the area of their graduate degree and

desired to be assigned to one again. Even 77.2 percent of the officers who had never been assigned to a P-coded billet in the area of their graduate education wanted to be assigned to one. Of all officers who responded to the survey, 81.5 percent desired to be assigned to a P-coded billet.

Table XX shows that significantly fewer Unrestricted Line officers³⁸ who have served in P-coded billets wanted to be assigned again to a P-coded billet, when compared to Restricted Line and Staff communities. These responses are similar to the results in 1973.

TABLE XX DESIRABILITY OF P-CODED BILLETS BY OFFICER COMMUNITIES

P-coded Billet	COMMUNITIES (Percent)			Total	
	URL	RL	STAFF	n	%
Assigned, desire reassignment	40.1	68.2	70.0	473	54.8
Assigned, do not desire reassignment	10.6	8.2	13.7	93	10.8
Never assigned, desire assignment	38.0	16.4	13.2	226	26.2
Never assigned, do not desire assignment	11.3	7.2	3.1	71	8.2
Total	100.0	100.0	100.0	863	100.0

³⁸Appendix B(27).

13. Assignments to P-Coded Billets

According to the responses to combined questions 29 and 30, over half of the officers who have Navy-sponsored graduate degrees (62 percent) were assigned to a P-coded billet within four years after graduation. However, only 69.5 percent of officers were ever assigned to a P-coded billet. Of those officers who were assigned to billets, 56.7 percent were assigned immediately, and 89.2 percent were assigned within four years. (These results do not differ from the 1973 results.)

Table XXI shows that fewer Unrestricted Line officers

TABLE XXI COMPARISON OF WHEN OFFICERS ARE ASSIGNED TO P-CODED BILLET BY OFFICER COMMUNITIES

When Assigned to P-coded Billet (Years following graduation)	COMMUNITIES (Percent)			Total	
	URL	RL	STAFF	n	%
Immediately	31.5	71.9	71.4	379	56.7
1-2	15.7	7.4	5.4	67	10.0
3-4	32.3	15.3	19.2	150	22.5
5-6	8.1	1.8	2.2	28	4.2
7-8	6.0	2.3	1.7	24	3.6
9-10	3.8	1.2	0.0	12	1.8
11 or later	2.6	0.1	0.1	8	1.2
Total	100.0	100.0	100.0	668	100.0

(79.5 percent) are assigned to a P-coded billet within the first four years after graduation, when compared to the

Restricted Line and Staff communities (94.6 and 96 percent, respectively).

Fewer Unrestricted Line officers are assigned or have been assigned to a P-coded billet (55.2 percent) than 20 years ago (although the difference is not statistically significant at the 95-percent confidence level³⁹). However, slightly more Restricted Line and Staff officers were being assigned in 1994 (80.2 and 85.5, respectively) than in 1973.

14. Recommendations Concerning the P-coding System

When asked about their opinion on the P-coding system (question 23), almost half of the officers (47.6 percent) did not feel qualified to recommend changes to the P-coding system. However, 44.4 percent (\pm 5.8 percent)⁴⁰ of the officers in the Unrestricted Line (Table XXII) community who made a comment said that more P-coded billets should be available for the Unrestricted Line officers, which is higher than the other communities.

15. Technical Obsolescence

The results from combined questions 31 and 32 show that, if not assigned to a P-coded billet upon completion of a technical degree, 86.8 percent of the officers believed that the subject matter learned would become obsolete due to rapidly changing technology unless the officer maintains

³⁹Appendix B(28).

⁴⁰Appendix B(29).

TABLE XXII COMPARISON OF RECOMMENDATIONS TO THE P-CODING SYSTEM BY OFFICER COMMUNITIES

Recommendations to the P-coding System	COMMUNITIES (Percent)			Total	
	URL	RL	STAFF	n	%
Make more available to URL officers	25.9	4.9	3.2	128	14.7
Fill only with RL officers	1.6	6.3	0.9	23	2.6
System OK, continue	12.2	20.2	20.5	142	16.4
Continue system with modifications	18.6	20.6	16.8	162	18.7
Do not feel qualified to make recommendations	41.7	48.0	58.6	413	47.6
Total	100.0	100.0	100.0	868	100.0

currency on an individual basis (Table XXIII). Of this majority, 88.6 percent thought that currency would be lost within six years. These results mirror the responses from the 1973 survey.

16. Methods of Maintaining Proficiency

Fully 80.5 percent of the officers have maintained currency in the area of their graduate education by a variety of methods. Of the officers who said they maintain currency (combined questions 33 and 34), the most popular method is to use a combination of professional journals and organizations and on-the-job utilization (44.6 percent). This was also the number-one answer in 1973.

TABLE XXIII OPINION AS TO WHEN A TECHNICAL DEGREE WILL BECOME OBSOLETE UNLESS CURRENCY IS MAINTAINED

If not assigned to P-coded billet within <i>so many</i> years of graduation, subject matter is obsolete unless currency is maintained on individual basis		
	n	Percent
1-2	101	12.6
3-4	317	39.5
5-6	198	24.7
7-8	40	5.0
9-10	31	3.8
11-12	3	0.4
13 or longer	5	0.6
Never obsolete	108	13.4
Total	803	100.0

Table XXIV shows the methods used to maintain currency. It is important to note that, of the officers who did not maintain currency, 56.5 percent said they had never been assigned to a P-coded billet.

17. Graduate Education and Promotion

Combined questions 35 and 36 indicate that the majority of officers (62.7 percent) who have been eligible for promotion since completing their graduate education felt that their education was a positive factor in their selection for promotion. This is significantly more than the proportion of officers in 1973 (56.8 percent) who said that graduate

TABLE XXIV METHODS OF MAINTAINING CURRENCY IN THE AREA OF GRADUATE EDUCATION

Method of maintaining currency	n	Percent
Professional journals and organizations	80	10.3
On-the-job utilization	188	24.3
Off-the-job utilization	13	1.7
1 and 2 above	345	44.6
1 and 3 above	46	6.0
2 and 3 above	58	7.5
Current, but not these methods	43	5.6
Total	773	100.0

education had a positive effect on their promotion.⁴¹

Table XXV shows that a significantly smaller percentage (49.3 percent) of Unrestricted Line (URL) officers felt that graduate education was a positive factor in their promotion, regardless of when they were promoted.⁴² However, the proportion of URL officers in 1994 who said "positive" is significantly more than the proportion who said the same in 1973 (38.6 percent).

18. Uniqueness, Quality, and Relevance Issues

It is important to learn what Naval officers think about the uniqueness, quality, and relevance of the schools they attended. Questions 37 through 56 of the survey were

⁴¹Appendix B(30).

⁴²Appendix B(31).

TABLE XXV COMPARISON OF OPINIONS OF GRADUATE EDUCATION'S EFFECT ON PROMOTION BY OFFICER COMMUNITIES

When promoted and the effect graduate education played in the promotion decision	COMMUNITIES (Percent)			Total	
	URL	RL	STAFF	n	%
Early, positive	4.7	4.2	5.2	36	4.3
Early, negative	0.0	0.1	0.0	1	0.1
Early, no effect	5.0	1.6	3.1	30	3.6
With group, positive	49.3	66.0	69.2	487	58.5
With group, negative	4.1	0.1	0.1	22	2.6
With group, no effect	27.3	16.9	14.0	176	21.1
Failed, negative	4.4	6.3	2.6	35	4.2
Failed, no effect	5.2	4.8	5.8	47	5.6
Total	100.0	100.0	100.0	834	100.0

added to the 1973 questionnaire format to discover how officers who have received a Navy-sponsored graduate degree perceive these items. Each topic is analyzed separately, including a comparison between the responses from NPS and CIVINS graduates. (Appendix D contains the percentage responses to each question, with a comparison between the responses from each degree source.)

In analyzing the responses to the questions in this section, a 5-point scale is used with one equal to the least favorable response and five equal to the most favorable. For example, for the responses to questions 37 through 42 (the

extent to which the school provided the items), one equals "to no extent," and five equals "to a great extent."

a. Uniqueness of Graduate Education

Table XXVI shows the officers' opinions as to

TABLE XXVI COMPARISON OF UNIQUENESS OF NAVY-SPONSORED GRADUATE EDUCATION BY SOURCE OF DEGREE

To what extent did the school provide military uniqueness	<u>NPS</u> <u>Graduates</u> Percent	<u>CIVINS</u> <u>Graduates</u> Percent	<u>All</u> <u>Respondents</u> Percent
To no extent	4.7	30.7	10.7
Very little extent	11.5	21.9	13.5
To some extent	22.4	15.6	20.8
Quite a bit	31.6	16.8	28.2
To a great extent	29.8	15.0	26.8
Total	100.0	100.0	100.0

whether the school they attended provided a unique environment in which to obtain their education (questions 37 through 42). "Uniqueness," for purposes of this thesis, is described as the ability to provide a Naval officer with a distinctly military environment in which to learn and, at the same time, fulfill the educational requirements of the Navy. For instance, did the school have faculty with adequate knowledge of the Department of Defense (DoD), or were there DoD-oriented

computer databases and DoD-specific publications, or a DoD orientation of the courses?

The graduates of NPS rated the uniqueness of their school very highly, with the means of the questions between 3.42 and 4.15 (on a scale of 1 to 5). The highest rated item was question 42, the extent to which their school provided "an environment where military officers benefit from a shared knowledge of their counterparts' expertise," with 78 percent of the respondents saying that NPS provided "quite a bit" to "a great extent."

The civilian university graduates rated the military uniqueness of their school somewhat lower. The means of questions 37 through 42 were between 2.02 and 3.94. The highest rated item was, as with the NPS respondents, the environment where officers benefit from others' expertise, with 72.3 percent of the CIVINS graduates rating it in the top two categories. The CIVINS graduates did not appear to have as much access to DoD-specific publications or DoD-oriented databases (the two lowest rated items) as the NPS graduates may have had, and hence might have felt that their schools did not provide the military uniqueness that NPS does.

b. Quality of Graduate Education

Questions 43 through 52 asked the respondents to rate the quality of various items (e.g., library resources, core courses, faculty, etc.) at the school they attended.

Table XXVII shows the aggregate percentages of the 10 items

TABLE XXVII COMPARISON OF THE QUALITY OF NAVY-SPONSORED GRADUATE EDUCATION BY SOURCE OF DEGREE

Rate the quality of the item at the school attended	NPS <u>Graduates</u> Percent	CIVINS <u>Graduates</u> Percent	All <u>Respondents</u> Percent
Very low	1.6	6.1	2.6
Low	6.1	6.6	6.2
Middle quality	25.2	21.5	24.4
High	42.1	29.8	39.4
Very high	25.0	36.0	27.4
Total	100.0	100.0	100.0

that were rated.

The means of the items for NPS graduates in this section were between 3.59 and 4.13, with the quality of the curriculum-specific courses rating the highest (84.1 percent in the High to Very High categories). The lowest rated item was the quality of the refresher courses, with only 54.4 percent of the respondents rating it High to Very High. This may be due to an unfamiliarity of a good number of NPS graduates with refresher courses.

CIVINS graduates rated the quality of the items at their school very high. The means of the items were between 2.85 and 4.30, with library resources rated highest and the lowest score for the item "personnel support" (for example, exchanges and family services), which are not likely to be

located close to civilian universities. CIVINS graduates rated all of these items higher than did NPS graduates (when analyzing means) except computer resources and staff, refresher courses, and personnel support.

c. Relevance of Graduate Education

Questions 53 through 56 were answered only by NPS graduates. Table XXVIII displays the aggregate percentages

TABLE XXVIII OPINION AS TO THE RELEVANCE OF THE NAVAL POSTGRADUATE SCHOOL

How strongly did the respondent agree with the statements of relevance	<u>NPS Graduates</u>
	Percent
Strongly disagree	5.1
Disagree	10.3
Neutral	22.2
Agree	31.1
Strongly agree	31.3
Total	100.0

for how strongly the officer agreed with the statements of how relevant an NPS education is to him or her. Almost two-thirds (62.4 percent) of the officers agreed with the statements of relevance to some extent. The NPS graduates felt most strongly that an NPS education benefits an officer for the remainder of his or her career (mean=4.28). Of these questions, the NPS graduates felt least strongly about the statement that NPS provides students with exposure and

connectivity to DoD officials and organizations, but 45.1 percent still agreed or strongly agreed with the statement.

V. CONCLUSIONS AND RECOMMENDATIONS

A. SIGNIFICANT FINDINGS

The following conclusions are derived from the information contained in this thesis.

1. Most officers thought that graduate education should be undertaken at a point somewhere between five and eight years of commissioned service, but the majority did not study then. However, it appears that more officers are studying at their preferred career point now than did officers 20 years ago.

2. The overwhelming majority of officers with a Navy-sponsored graduate degree intended to remain in the service 20 years or longer. And since 80 percent of officers with eight years or less of commissioned service intended to stay 20 years or more, it appears that graduate education has a positive influence on personnel retention and would be most effective early in an officer's career.

3. Most graduates felt that the main reason why officers seek graduate education is "to remain competitive with their contemporaries for further assignment and promotion."

4. Over 80 percent of officers chose their curriculum, with significantly more CIVINS graduates than NPS graduates having their choice.

5. Almost 50 percent of the officers believed fitness reports for full-time graduate students should be "not observed" (the answer given most).

6. The majority of officers who attended NPS rated it as equivalent to a civilian university, while the majority of officers who attended civilian universities rated their school as superior to NPS.

7. Most officers, both at NPS and CIVINS, believed the curriculum structure at their school was well-balanced.

8. An overwhelming majority of graduates, both at NPS and CIVINS, thought their school administration was efficient and helpful to some extent.

9. The majority of officers said that the academic difficulty of their studies was what they had anticipated.

10. More officers in 1994 than in 1973, both at NPS and at CIVINS, said that a greater percentage of their instructors were excellent.

11. Significantly more graduates in 1994 than in 1973, both at NPS and at CIVINS, felt their family and social life changed for the better.

12. Almost three-quarters of all officers with a Navy-sponsored graduate degree said that getting a P-code was beneficial to their career.

13. Over 90 percent of the officers who have served in a P-coded billet believed that graduate education was necessary or desirable to perform their duties effectively.

14. The majority (over 80 percent) of officers with a graduate degree have used their education in other than P-coded billets, indicating that graduate education is useful in all aspects of an officer's career.

15. Over 80 percent of officers with a Navy-sponsored graduate degree desired to be assigned to a P-coded billet, and 62 percent of officers were assigned to a P-coded billet within four years of graduation.

16. The majority of officers who have been eligible for promotion since completing their education said that their degree was a positive factor in their selection.

17. NPS graduates gave a higher rating than did CIVINS graduates to the distinctly military environment (or "uniqueness") of their educational institution.

18. NPS graduates considered the relevance of their graduate education to be very high.

19. Overall, the number-one answers in 1994 were the same as the responses in 1973, with only the percentages changing somewhat.

B. RECOMMENDATIONS FOR FURTHER RESEARCH

Research could be pursued on a continuous basis to learn what the attitudes and opinions of officers currently studying at both NPS and CIVINS are toward their graduate education. Comparisons can be made with the results of this study (and

the 1973 survey) to determine if attitudes are changing, and in what direction.

In addition, supplemental analysis of this survey by specific designator could be done to determine the perceptions toward graduate education by each warfare community.

Finally, an analysis of the attitudes of officers without a Navy-sponsored graduate degree (or without a graduate education) could be compared with the results of this thesis. (For example, what are those officers' opinions toward retention and promotion?) A study of this type could provide valuable insight into the perceived benefits of graduate education by other officers in the Navy.

APPENDIX A

NAVAL POSTGRADUATE SCHOOL Opinion Survey of Naval Officers Who Have Received a Navy- Sponsored Graduate Degree

The following questions are important for evaluating your opinions concerning numerous topics related to obtaining a graduate degree and the utilization of your graduate education. Your responses are **extremely important** to us. The information will be held in strict confidence and used for research purposes only. Please mark your answer to the following questions on the enclosed answer sheet. Since the answer sheet will be scanned by a machine, please remember to use a **No. 2 pencil** to completely blacken the boxes next to your choice(s). Feel free to send comments to us when you return the survey.

Return the answer sheet and any comments in the enclosed envelope.

SECTION I. CURRICULUM & DESIGNATOR

At the top of the answer sheet on side 1 there is a block of alternating white and pink-shaded rows. Enter two digit numbers (and shade the appropriate boxes) from the list of curricula below to answer the following questions:

(In the block)

- Lines 1 & 2 --- The curriculum you studied.
Lines 3 & 4 --- The curriculum you would have preferred to study.
Lines 5 & 6 --- The curriculum more officers should study.

List of Curricula

- | | |
|-------------------------------|--------------------------------|
| 01. Aeroelectronics | 28. Management, Commun. |
| 02. Anti-submarine Warfare | 29. Management, Computer Sys |
| 03. Behavioral Science | 30. Management, Financial |
| 04. Biological Sciences | 31. Management, Pers. (MPTA) |
| 05. Chemistry | 32. Management, Petroleum |
| 06. Computer Science | 33. Management, Procurement |
| 07. Criminal Law | 34. Management, Systems Inv. |
| 08. Ecology | 35. Management, Transportation |
| 09. Economics | 36. Marketing |
| 10. Education | 37. Material Science |
| 11. Engineering, Acoustics | 38. Mathematics |
| 12. Engineering, Aeronautical | 39. Meteorology |
| 13. Engineering, Chemical | 40. Naval History |
| 14. Engineering, Commun. | 41. Oceanography |

- | | |
|---------------------------------|----------------------------|
| 15. Engineering, Electrical | 42. Ocean Law |
| 16. Engineering, Hydrograph. | 43. Operations Research |
| 17. Engineering, Mgmt/Indust | 44. Physics |
| 18. Engineering, Mechanical | 45. Political Science |
| 19. Engineering, Nav. Constr. | 46. Public Relations |
| 20. Engineering, Nuclear Power | 47. Psychology |
| 21. Engineering, Ordnance | 48. Religion |
| 22. English | 49. Retailing |
| 23. Intelligence | 50. Social Science |
| 24. International Law | 51. Subsistence Technology |
| 25. International Relations | 52. Taxation |
| 26. Languages | |
| 27. Management, Business Admin. | |

IN THE SAME WHITE AND PINK BLOCK, indicate your four-digit **designator** in lines 7 through 10. Remember to write down the numbers and shade in the blocks. For example:
(In the block)

Lines 7 - 10 --- Your designator

SECTION II. QUESTIONS

Answers to the following questions are to be entered in the numbered blocks on the answer sheet.

Questions 1 and 2

What is your present paygrade? (Please choose only one.)

1.
 - A. O-1
 - B. O-2
 - C. O-3
 - D. O-4
 - E. O-5
2.
 - A. O-6
 - B. O-7
 - C. O-8
 - D. O-9
 - E. O-10

Questions 3 and 4

Years of commissioned service completed. (Please choose only one.)

3.
 - A. 1-4
 - B. 5-6
 - C. 7-8
 - D. 9-10
 - E. 11-12
4.
 - A. 13-14
 - B. 15-16
 - C. 17-18
 - D. 19 or more

Questions 5 and 6

Years of commissioned service upon completion of your last graduate degree. (Please choose only one.)

5. A. 1-4
 B. 5-6
 C. 7-8
 D. 9-10
 E. 11-12
6. A. 13-14
 B. 15-16
 C. 17-18
 D. 19 or more

Questions 7 and 8

A career naval officer should study for a graduate degree during which years of commissioned service? (Please choose only one.)

7. A. 1-4
 B. 5-6
 C. 7-8
 D. 9-10
 E. 11-12
8. A. 13-14
 B. 15-16
 C. 17-18
 D. 19 or more

9. I intend to remain in the Navy for:
 - A. The completion of my obligated service but less than 20 years.
 - B. 20 years.
 - C. 20-26 years.
 - D. 26 years or more.
10. The availability of graduate education:
 - A. Positively influenced my decision to remain in the Navy.
 - B. Negatively influenced my decision to remain in the Navy.
 - C. Had no effect on my decision to remain in the Navy.
11. In my opinion, the primary reason most naval officers seek graduate education is:
 - A. To remain competitive with their contemporaries for further assignment and promotions (ticket punching).
 - B. To become a more capable naval officer.
 - C. To procure a P-code.
 - D. To increase employment opportunities upon retirement.
 - E. To fulfill personal educational aspirations.
12. I received my graduate degree from NPS and: (If not applicable, go to next question.)

- A. Consider it to be superior to civilian universities.
 - B. Would have preferred to attend a civilian university.
 - C. Consider it equivalent to civilian universities.
13. I received my graduate degree from a Civilian University and: (If not applicable, go to next question.)
- A. Consider it to be superior to NPS.
 - B. Would have preferred to attend NPS.
 - C. Consider it equivalent to NPS.
14. My graduate degree curriculum was a choice that was made by me.
- A. Yes.
 - B. No.
15. The curriculum of my graduate education was:
- A. Broadly structured allowing for numerous electives.
 - B. Narrowly structured allowing for few electives.
 - C. Well balanced.
16. The school administration where I attended was:
- A. Very efficient and helpful
 - B. Efficient and helpful
 - C. Inefficient and uncooperative
17. The academic difficulty of my graduate education was:
- A. About what I had anticipated.
 - B. Less difficult than I had anticipated.
 - C. More difficult than I had anticipated.
18. Of the instructors I had, I would consider the following percentage to have been excellent:
- A. More than 90%.
 - B. About 75%.
 - C. About 50%.
 - D. About 25%.
 - E. Less than 10%.
19. Of the courses taken during my graduate education, I would consider the following percentage to have been excellent:
- A. More than 90%.
 - B. About 75%.
 - C. About 50%.
 - D. About 25%.
 - E. Less than 10%.
20. Selection boards (for promotion) should consider fitness reports for full time graduate students as:

- A. Equivalent to fitness reports received by officers assigned to normal operational/shore billets.
 - B. A special assignment, and place little emphasis on the professional ratings assigned.
 - C. A special assignment with emphasis only on the student's grade point average.
 - D. "Not observed" and submitted for record purposes only.
21. Compared to a normal tour of duty, social/family life generally changes when studying for a graduate degree:
- A. Significantly for the better.
 - B. Somewhat for the better.
 - C. Somewhat for the worse.
 - D. Significantly for the worse.
 - E. Has little or no effect as compared to a normal tour of duty.
22. As a result of my graduate education, I received a change in designator.
- A. Yes.
 - B. No.
23. In my opinion:
- A. More P-coded billets should be available for the unrestricted line officers.
 - B. The P-coded billets system should be utilized only by the restricted line officers.
 - C. The P-coding system is functioning properly and should be continued.
 - D. The P-coding system should be continued with some modifications.
 - E. I do not feel qualified to recommend changes to the P-coding system.
24. Obtaining a P-code commensurate with graduate education is generally:
- A. Beneficial to an officer's career.
 - B. Has no effect on an officer's career.
 - C. Detrimental to an officer's career.

Questions 25 and 26

To effectively perform assigned duties in the P-coded billets I have held:

25. A. A graduate education in that specialty was a necessity.
- B. Any graduate education was a necessity.
 - C. A graduate education in that specialty was desirable.
 - D. Any graduate education was desirable.

- E. An undergraduate education in that specialty would have been equally effective.
26. A. Any undergraduate education would have been equally effective.
B. I haven't been assigned to a P-coded billet.
27. My graduate education has been utilized in other than P-coded billets:
A. Extensively.
B. Frequently.
C. Occasionally.
D. Never.
28. Concerning the utilization of my graduate education:
A. I have been assigned to one or more P-coded billets in the area of my graduate education, and I desire to be reassigned to the same type of billet.
B. I have been assigned to one or more P-coded billets in the area of my graduate education, and I do not desire to be reassigned to another.
C. I have never been assigned to a P-coded billet in the area of my graduate education, but I desire to be so assigned.
D. I have never been assigned, and I do not desire to be assigned to a P-coded billet.

Questions 29 and 30

I was assigned to a P-coded billet within (how many) years after completing my graduate education.

29. A. Immediately
B. 1-2
C. 3-4
D. 5-6
E. 7-8
30. A. 9-10
B. 11 or later
C. I have never been assigned to a P-coded billet.

Questions 31 and 32

If not assigned to a P-coded billet within (how many) years upon completion of a technical curriculum (e.g., Electrical Engineering, Aeronautical Engineering, etc.), the subject matter learned will probably be obsolete due to rapidly changing technology unless the officer maintains currency on an individual basis:

31. A. 1-2
B. 3-4
C. 5-6
D. 7-8
E. 9-10
32. A. 11-12

- B. 13 or longer
- C. Never obsolete

Questions 33 and 34

I have kept current in the area for which I was educated primarily by:

- 33. A. Professional journals and organizations.
- B. On-the-job utilization.
- C. Off-the-job utilization.
- D. A and B above.
- E. A and C above.
- 34. A. B and C above.
- B. I have kept current but not by any of the aforementioned methods.
- C. I have not kept current.

Questions 35 and 36

My promotions have been ____ and I think my graduate education was a ____ factor in these promotions decisions:

- 35. A. Early; positive (helped me).
- B. Early; detrimental (hurt me).
- C. Early; insignificant.
- D. With my contemporaries; positive (helped me).
- E. With my contemporaries; detrimental (hurt me).
- 36. A. With my contemporaries; insignificant.
- B. Failed selection; detrimental (hurt me).
- C. Failed selection; insignificant.
- D. I have not been eligible for selection since completion of my graduate education.

Using the scale provided below, indicate the extent to which the University you attended (Civilian or NPS) provided the following:

To No			To A Great	
Extent			Extent	
A	B	C	D	E

- 37. Faculty knowledge of the Department of Defense (DoD)
- 38. DoD-specific publications
- 39. DoD-oriented databases, computer models and simulations
- 40. The DoD orientation of courses
- 41. Support for DoD-oriented theses
- 42. An environment where military officers benefit from a shared knowledge of their counterparts' expertise

Rate the quality of the following items at the University you attended (Civilian or NPS) using the scale provided below.

Very		Very		
Low		High		
A	B	C	D	E

- 43. Core courses
- 44. Curriculum-specific courses
- 45. Elective courses
- 46. Faculty
- 47. Laboratories
- 48. Computer resources
- 49. Computer staff
- 50. Library resources
- 51. Refresher courses
- 52. Personnel support (e.g., exchanges, family service)

If you attended the Naval Postgraduate School, answer the following questions using the scale provided below.

Strongly				Strongly
<u>Disagree</u>				<u>Agree</u>
A	B	C	D	E

- 53. An NPS education benefits an officer for the remainder of his/her career.
- 54. The NPS curricula prepare an officer for assignments to DoD.
- 55. NPS provides students with exposure and connectivity to DoD officials and organizations.
- 56. My NPS education will increase the combat effectiveness of my military service.

Thank you for helping us with this survey. Please return the answer sheet in the enclosed self-addressed postage-paid envelope.

APPENDIX B

This appendix contains the statistical proofs for the analysis done in this thesis.

(1) Equation (1) is used to determine the standard error of the estimate,

$$\hat{p} \pm z_{\alpha/2} \sqrt{\frac{\hat{p}(1-\hat{p})}{n} \sqrt{\frac{N-n}{N-1}}} \quad (1)$$

where "p hat" is equal to 0.5, which is considered the worse case scenario. The sample (n) included 147 Lieutenants out of the 1,404 population total (N). Hence the standard error is ± 7.6 percent at a 95 percent confidence level. When the total sample population (n=964) is compared to the total population (N=7173) the standard error drops to ± 2.9 . Note: the finite population correction factor must be used because the population is less than 20 times the sample and sampling is done without replacement.

(2) Equation (2), with test statistic z, is used for comparing proportions between two independent samples, where

$$z = \frac{(\hat{p}_1 - \hat{p}_2)}{\sqrt{\hat{p}_0(1-\hat{p}_0)} \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}} \quad (2)$$

p_0 , the pooled proportion, equals Equation (3). This is the

$$\hat{p}_0 = \frac{x_1 + x_2}{n_1 + n_2} \quad (3)$$

case in the samples in 1973 and 1994.

At a 95 percent confidence level, the percentage of officers who said that study should be completed at the five through eight year point was statistically similar between the samples. However, the proportions for the officers that did study at that point were statistically different.

(3) Using Equation (1), 82 officers (n) had less than 8 YCS, 66 of which intended to stay greater than 20 years. At a 95% confidence level, and assuming the population of officers with less than 8 YCS is the same proportion as the sample, the confidence level is ± 7.98 .

(4) In equations (2) and (3), where $p_1=.053$, $n_1=952$, $x_1=50$, $p_2=.008$, $n_2=812$, and $x_2=7$.

(5) For the reason "to fulfill personal educational aspirations" and using equations (2) and (3), the NPS values are $p_1=.242$, $n_1=755$, and $x_1=183$, and the CIVINS numbers are $p_2=.141$, $n_2=199$, and $x_2=28$. The test statistic, z , is 3.05, which is statistically significant at the 95 percent confidence level. For the reason "to become a more capable officer", the NPS values are $p_1=.213$, $n_1=755$, and $x_1=161$, and the CIVINS numbers are $p_2=.312$, $n_2=199$, and $x_2=62$.

(6) In equations (2) and (3), for the 1994 survey $p_1=.807$, $n_1=961$, $x_1=776$. For 1973, $p_2=.868$, $n_2=824$, and $x_2=715$.

(7) In the 1994 survey, NPS graduates who chose their curriculum amounted to 78.5 percent (p_1), $n_1=763$, and $x_1=599$. For CIVINS graduates, $p_2=.889$, $n_2=194$, and $x_2=177$. Using

equations (2) and (3), the percentages are statistically significant at the 95 percent confidence level.

(8) Responses to combined questions 35 and 36 determine the officers who have failed for selection ($n=82$). If we assume that this proportion equals the percentage of officers who have failed for selection in the population of officers with Navy-sponsored graduate degrees, then $N=615$. Using equation (1), with $p=.39$, the confidence interval is ± 9.8 percent at the 95 percent confidence level.

(9) From the information derived from questions 35 and 36, 58 (n) of the respondents thought that graduate education had a detrimental effect on their selection or non-selection for promotion. Assuming $N=435$ (6.1 percent of the population), at the 95 percent confidence level, the interval is ± 10.9 percent, using equation (1).

(10) In equation (1), where $p=.885$, $n=122$ (the number of Restricted Line respondents) and $N=1,011$ ($122/868$ times 7,173).

(11) Using equation (1) where $n=200$, $p=.675$ and $N=1,488$, assuming CIVINS graduates account for 20.8 percent of the population of officers with Navy-sponsored graduate degrees.

(12) In equations (2) and (3), where NPS graduates ($p_1=.576$, $n_1=765$, $x_1=441$) differ significantly from CIVINS graduates ($p_2=.675$, $n_2=200$, and $x_2=135$) at the 95 percent confidence level.

(13) In equations (2) and (3), where $p_1=.293$, $n_1=765$, $x_1=224$ (the information from 1994), and $p_2=.168$, $n_2=469$ and $x_2=79$ (the information from 1973).

(14) In equations (2) and (3), where the 1994 data are $p_1=.675$, $n_1=200$, $x_1=135$, and the 1973 data are $p_2=.724$, $n_2=352$, and $x_2=255$ and the test statistic, z , is -1.21 .

(15) Using equation (1) where $p=.749$, $n=199$ and $N=1,481$, which is 20.6 percent of the total population.

(16) In equations (2) and (3), where the NPS data are $p_1=.558$, $n_1=762$, $x_1=425$, and the CIVINS data are $p_2=.749$, $n_2=199$, and $x_2=149$ and the test statistic, z , is -4.89 .

(17) In equations (2) and (3), where the 1994 NPS data are $p_1=.443$, $n_1=762$, $x_1=337$, and the 1973 NPS data are $p_2=.515$, $n_2=468$, and $x_2=241$ and the test statistic, z , is -2.46 .

(18) In equations (2) and (3), where the 1994 CIVINS data are $p_1=.251$, $n_1=199$, $x_1=50$, and the 1973 CIVINS data are $p_2=.313$, $n_2=351$, and $x_2=110$ and the test statistic, z , is -1.54 .

(19) In equations (2) and (3), where the NPS data are $p_1=.356$, $n_1=763$, $x_1=272$, and the CIVINS data are $p_2=.518$, $n_2=199$, and $x_2=103$ and the test statistic, z , is -4.17 .

(20) In equations (2) and (3), where the 1994 NPS data are $p_1=.356$, $n_1=763$, $x_1=272$, and the 1973 NPS data are $p_2=.264$, $n_2=469$, and $x_2=124$ and the test statistic, z , is 3.36 .

(21) In equations (2) and (3), where the respondents who said "greater than 90 percent" in the 1994 NPS data are

$p_1=.21$, $n_1=765$, $x_1=161$, and the 1973 NPS data are $p_2=.07$, $n_2=472$, and $x_2=33$ and the test statistic, z , is 6.57.

(22) In equations (2) and (3), where the respondents who said "greater than 90 percent" in the 1994 CIVINS data are $p_1=.397$, $n_1=199$, $x_1=79$, and the 1973 CIVINS data are $p_2=.253$, $n_2=352$, and $x_2=89$ and the test statistic, z , is 3.53.

(23) In equations (2) and (3), where the NPS data are $p_1=.337$, $n_1=762$, $x_1=257$, and the CIVINS data are $p_2=.269$, $n_2=197$, and $x_2=53$ and the test statistic, z , is 1.81.

(24) In equations (2) and (3), where the NPS data are $p_1=.72$, $n_1=758$, $x_1=546$, and the CIVINS data are $p_2=.823$, $n_2=198$, and $x_2=163$ and the test statistic, z , is -2.95.

(25) In equations (2) and (3), where $p_1=.74$, $n_1=955$, $x_1=707$ (the information from 1994), and $p_2=.519$, $n_2=806$, and $x_2=419$ (the information from 1973) and $z=9.62$.

(26) In equations (2) and (3), where $p_1=.426$, $n_1=702$, $x_1=299$ (the information from 1994), and $p_2=.32$, $n_2=569$, and $x_2=182$ (the information from 1973) and $z=3.88$.

(27) In equations (2) and (3), where the URL information is $p_1=.401$, $n_1=424$, $x_1=170$ and the RL data are $p_2=.682$, $n_2=220$, and $x_2=150$ and $z=-6.78$. Similar results are obtained with a comparison between the URL and Staff communities.

(28) In equations (2) and (3), where the 1994 URL data are $p_1=.552$, $n_1=426$, $x_1=235$, and the 1973 URL data are $p_2=.608$, $n_2=360$, and $x_2=219$ and the test statistic, z , is -1.58.

(29) Using equation (1), where $n=248$ and $N=2,050$, the proportion of URL community who commented.

(30) In equations (2) and (3), where the respondents who said "positive" in the 1994 data are $p_1=.627$, $n_1=834$, $x_1=523$, and the "positive" responses in the 1973 data are $p_2=.568$, $n_2=665$, and $x_2=378$ and the test statistic, z , is 2.32.

(31) In equations (2) and (3), where the 1994 URL data are $p_1=.493$, $n_1=362$, $x_1=178$, and the RL data are $p_2=.66$, $n_2=196$, and $x_2=129$ and the test statistic, z , is -3.79. Similar results are obtained with a comparison between the URL and Staff communities.

APPENDIX C

Questions 1 & 2 - Present Paygrade (RANK)

Label	Frequency	Percent	Cum Percent
Lieutenant	147	15.2	15.2
Lieutenant Commander	344	35.7	50.9
Commander	306	31.7	82.7
Captain	143	14.8	97.5
Rear Admiral Lower Half	10	1.0	98.5
Rear Admiral Upper Half	13	1.3	99.9
Vice Admiral	1	0.1	100.0
	-----	-----	
Total	964	100.0	

Valid cases 964 Missing cases 0

- - - - -

Questions 3 & 4 - Years of Commissioned Service completed (YCS)

Label	Frequency	Percent	Cum Percent
1-4	5	.5	.5
5-6	9	.9	1.5
7-8	68	7.1	8.5
9-10	99	10.3	18.8
11-12	90	9.3	28.1
13-14	150	15.6	43.7
15-16	132	13.7	57.4
17-18	133	13.8	71.2
19 or more	278	28.8	100.0
	-----	-----	
Total	964	100.0	

Valid cases 964 Missing cases 0

Question 5 & 6 - Years of Commissioned Service (YCS) upon completion of last graduate degree

Label	Frequency	Percent	Cum Percent
1-4	97	10.2	10.2
5-6	163	17.1	27.2
7-8	270	28.3	55.5
9-10	161	16.9	72.4
11-12	132	13.8	86.2
13-14	71	7.4	93.6
15-16	21	2.2	95.8
17-18	16	1.7	97.5
19 or more	24	2.5	100.0
	9	Missing	

Total	964	100.0	
Valid cases	955	Missing cases	9

Question 7 & 8 - Years of Commissioned Service (YCS) when an officer should study for a graduate degree

Label	Frequency	Percent	Cum Percent
1-4	22	2.3	2.3
5-6	353	37.0	39.3
7-8	341	35.7	75.1
9-10	171	17.9	93.0
11-12	54	5.7	98.6
13-14	8	0.8	99.5
15-16	3	0.3	99.8
17-18	1	0.1	99.9
19 or more	1	0.1	100.0
	10	Missing	

Total	964	100.0	
Valid cases	954	Missing cases	10

Question 9 - Intend to remain in Navy

Label	Frequency	Percent	Cum Percent
Completion of obligation	72	7.5	7.5
20 years	263	27.3	34.8
20-26 years	408	42.4	77.2
26 years or more	219	22.8	100.0
	2	Missing	

Total	964	100.0	
Valid cases	962	Missing cases	2

Question 10 - Influence of graduate education on retention

Label	Frequency	Percent	Cum Percent
Negative influence	2	.2	.2
Had no effect	193	20.1	20.3
Positive influence	766	79.7	100.0
	3	Missing	

Total	964	100.0	
Valid cases	961	Missing cases	3

Question 11 - In my opinion, the primary reason officers seek graduate education

Label	Frequency	Percent	Cum Percent
Remain competitive	390	41.0	41.0
Become more capable	221	23.2	64.2
Get a P-code	50	5.3	69.4
Increase job opportunities	76	8.0	77.4
Fulfill aspirations	215	22.6	100.0
	12	Missing	

Total	964	100.0	
Valid cases	952	Missing cases	12

Question 12 - Degree from NPS: Attitudes toward CIVINS

Label	Frequency	Percent	Cum Percent
Would Prefer CIVINS	100	13.1	13.1
Equivalent to CIVINS	441	57.6	70.7
Superior to CIVINS	224	29.3	100.0
	199	Missing	

Total	964	100.0	
Valid cases	765	Missing cases	199

Question 13 - Degree from CIVINS: Attitudes toward NPS

Label	Frequency	Percent	Cum Percent
Would Prefer NPS	11	5.5	5.5
Equivalent to NPS	54	27.0	32.5
Superior to NPS	135	67.5	100.0
	764	Missing	

Total	964	100.0	
Valid cases	200	Missing cases	764

Question 14 - Graduate degree curriculum was my choice

Label	Frequency	Percent	Cum Percent
Yes	776	80.7	80.7
No	185	19.3	100.0
	3	Missing	

Valid cases	Total 964	100.0	
	961	Missing cases 3	

Question 15 - Structure of the curriculum

Label	Frequency	Percent	Cum Percent
Narrowly structured	381	39.7	39.7
Well balanced	451	47.0	86.8
Broadly structured	127	13.2	100.0
	5	Missing	

Valid cases	Total 964	100.0	
	959	Missing cases 5	

Question 16 - School administration was:

Label	Frequency	Percent	Cum Percent
Inefficient/uncooperative	24	2.5	2.5
Efficient/helpful	560	58.3	60.8
Very efficient/helpful	377	39.2	100.0
	3	Missing	

Valid cases	Total 964	100.0	
	961	Missing cases 3	

Question 17 - Academic difficulty was:

Label	Frequency	Percent	Cum Percent
Less difficult	134	13.9	13.9
About what I anticipated	611	63.5	77.4
More difficult	217	22.6	100.0
	2	Missing	

Valid cases	Total 964	100.0	
	962	Missing cases 2	

Question 18 - Percentage of instructors considered excellent:

Label	Frequency	Percent	Cum Percent
Less than 10 %	16	1.7	1.7
About 25 %	65	6.7	8.4
About 50 %	184	19.1	27.5
About 75 %	460	47.8	75.3
More than 90 %	238	24.7	100.0
	1	Missing	

Total	964	100.0	
Valid cases	963	Missing cases	1

Question 19 - Percentage of courses considered excellent:

Label	Frequency	Percent	Cum Percent
Less than 10 %	5	.5	.5
About 25 %	46	4.8	5.3
About 50 %	184	19.1	24.4
About 75 %	514	53.4	77.8
More than 90 %	214	22.2	100.0
	1	Missing	

Total	964	100.0	
Valid cases	963	Missing cases	1

Question 20 - FITREPS should be considered by Selection Boards as:

Label	Frequency	Percent	Cum Percent
Equivalent to operational	159	16.5	16.5
Spec Assn, little emphasis	149	15.5	32.0
Spec Assn, GPA emphasis	186	19.4	51.4
Not Observed	467	48.6	100.0
	3	Missing	

Total	964	100.0	
Valid cases	961	Missing cases	3

Question 21 - Change in social/family life, compared to normal tour:

Label	Frequency	Percent	Cum Percent
Significantly worse	61	6.4	6.4
Somewhat worse	183	19.1	25.5
Little or no effect	87	9.1	34.6
Somewhat better	312	32.6	67.1
Significantly better	315	32.9	100.0
	6	Missing	

Total	964	100.0	
Valid cases	958	Missing cases	6

Question 22 - Change in designator?

Label	Frequency	Percent	Cum Percent
Yes	133	13.8	13.8
No	828	86.2	100.0
	3	Missing	

Total	964	100.0	
Valid cases	961	Missing cases	3

Question 23 - Opinion on P-coded billet system:

Label	Frequency	Percent	Cum Percent
Make more for URL officers	142	14.8	14.8
Fill only with RL officers	28	2.9	17.7
System OK, continue	159	16.5	34.2
Modify system, continue	177	18.4	52.6
Not qualified to say	455	47.4	100.0
	3	Missing	

Total	964	100.0	
Valid cases	961	Missing cases	3

Question 24 - Benefits of getting a P-code:

Label	Frequency	Percent	Cum Percent
Detrimental to career	25	2.6	2.6
Has no effect on a career	223	23.4	26.0
Beneficial to career	707	74.0	100.0
	9	Missing	

Total	964	100.0	
Valid cases	955	Missing cases	9

Questions 25 & 26 - To effectively perform duties in a P-coded billet, the level of education needed or desired:

Label	Frequency	Percent	Cum Percent
Grad Ed in specialty was necessary	275	28.9	28.9
Any Grad Ed was necessary	24	2.5	31.5
Grad Ed in specialty was desirable	302	31.8	63.3
Any Grad Ed desirable	35	3.7	66.9
Undergrad Ed in specialty would have been effective	49	5.2	72.1
Any Undergrad Ed would have been effective	17	1.8	73.9
Have not been in P-coded billet	248	26.1	100.0
	14	Missing	

Total	964	100.0	
Valid cases	950	Missing cases	14

Question 27 - Utilization of graduate education in other than P-coded billets:

Label	Frequency	Percent	Cum Percent
Extensively	167	17.7	17.7
Frequently	301	31.8	49.5
Occasionally	309	32.7	82.1
Never	169	17.9	100.0
	18	Missing	

Total	964	100.0	
Valid cases	946	Missing cases	18

Question 28 - Utilization of P-code:

Label	Frequency	Percent	Cum Percent
Been assigned, desire again	525	54.9	54.9
Been assigned, don't desire	102	10.7	65.6
Never assigned, desire	254	26.6	92.2
Never assigned, don't	75	7.8	100.0
	8	Missing	

Total	964	100.0	
Valid cases	956	Missing cases	8

Questions 29 & 30 - Assigned to a P-coded billet within how many years after completing graduate education:

Label	Frequency	Percent	Cum Percent
Immediately	379	39.4	39.4
1-2	67	7.0	46.4
3-4	150	15.6	62.0
5-6	28	2.9	64.9
7-8	24	2.5	67.4
9-10	12	1.2	68.7
11 or later	8	0.8	69.5
Never assigned	293	30.5	100.0
	3	Missing	
	-----	-----	
Total	964	100.0	

Valid cases 961 Missing cases 3

Questions 31 & 32 - If not assigned to a P-coded billet within (how many) years upon completion of a technical degree, the subject matter learned will probably be obsolete due to rapidly changing technology unless the officer maintains currency on an individual basis:

Label	Frequency	Percent	Cum Percent
1-2	101	12.6	12.6
3-4	317	39.5	52.1
5-6	198	24.7	76.7
7-8	40	5.0	81.7
9-10	31	3.9	85.6
11-12	3	0.4	85.9
13 or longer	5	0.6	86.6
Never obsolete	108	13.4	100.0
	161	Missing	
	-----	-----	
Total	964	100.0	

Valid cases 803 Missing cases 161

Questions 33 & 34 - I have kept current in the area for which I was educated primarily by:

Label	Frequency	Percent	Cum Percent
Prof. journals/org.	80	8.3	8.3
On-the-job utilization	188	19.6	27.9
Off-the-job utilization	13	1.4	29.3
1 & 2 above	345	35.9	65.2
1 & 3 above	46	4.8	70.0
2 & 3 above	58	6.0	76.0
Current, not those methods	43	4.5	80.5
Not kept current	187	19.5	100.0
	4	Missing	

Total	964	100.0	
Valid cases	960	Missing cases	4

Questions 35 & 36 - My promotions have been () and I think my graduate education was a () factor in these promotion decisions:

Label	Frequency	Percent	Cum Percent
Early; positive (helped)	36	3.8	3.8
Early; detrimental (hurt)	1	0.1	3.9
Early; insignificant	30	3.1	7.0
With group; positive	487	50.8	57.8
With group; detrimental	22	2.3	60.1
With group; insignificant	176	18.4	78.4
Failed; detrimental	35	3.6	82.1
Failed; insignificant	47	4.9	87.0
Not been eligible	125	13.0	100.0
	5	Missing	

Total	964	100.0	
Valid cases	959	Missing cases	5

Question 37 - The extent to which the school provided -- Faculty knowledge of the Department of Defense (DoD):

Label	Frequency	Percent	Cum Percent
To no extent	79	8.2	8.2
Very little extent	155	16.2	24.4
To some extent	214	22.3	46.8
Quite a bit	319	33.3	80.1
To a great extent	191	19.9	100.0
	6	Missing	

Total	964	100.0	
Valid cases	958	Missing cases	6

**Question 38 - The extent to which the school provided --
Department of Defense (DoD) specific publications:**

Label	Frequency	Percent	Cum Percent
To no extent	136	14.2	14.2
Very little extent	173	18.0	32.2
To some extent	239	24.9	57.1
Quite a bit	249	26.0	83.1
To a great extent	162	16.9	100.0
	5	Missing	
	-----	-----	
Total	964	100.0	

Valid cases 959 Missing cases 5

**Question 39 - The extent to which the school provided --
Department of Defense (DoD) oriented databases, computer
models and simulations:**

Label	Frequency	Percent	Cum Percent
To no extent	142	14.8	14.8
Very little extent	149	15.5	30.3
To some extent	218	22.7	53.1
Quite a bit	242	25.2	78.3
To a great extent	208	21.7	100.0
	5	Missing	
	-----	-----	
Total	964	100.0	

Valid cases 959 Missing cases 5

**Question 40 - The extent to which the school provided --
Department of Defense (DoD) orientation of courses:**

Label	Frequency	Percent	Cum Percent
To no extent	139	14.5	14.5
Very little extent	158	16.5	31.0
To some extent	236	24.6	55.6
Quite a bit	246	25.7	81.3
To a great extent	179	18.7	100.0
	6	Missing	
	-----	-----	
Total	964	100.0	

Valid cases 958 Missing cases 6

Question 41 - The extent to which the school provided -- Support for Department of Defense (DoD) oriented theses:

Label	Frequency	Percent	Cum Percent
To no extent	81	8.4	8.4
Very little extent	88	9.2	17.6
To some extent	158	16.4	34.0
Quite a bit	280	29.1	63.2
To a great extent	354	36.8	100.0
	3	Missing	
	-----	-----	
Total	964	100.0	

Valid cases 961 Missing cases 3

Question 42 - The extent to which the school provided -- An environment where military officers benefit from a shared knowledge of their counterparts' expertise:

Label	Frequency	Percent	Cum Percent
To no extent	38	4.0	4.0
Very little extent	53	5.5	9.5
To some extent	133	13.9	23.3
Quite a bit	285	29.7	53.0
To a great extent	451	47.0	100.0
	4	Missing	
	-----	-----	
Total	964	100.0	

Valid cases 960 Missing cases 4

Question 43 - The quality of the item at your school -- Core courses:

Label	Frequency	Percent	Cum Percent
Very low	11	1.1	1.0
Low	43	4.5	5.6
Middle quality	201	20.9	26.5
High	452	47.0	73.5
Very high	255	26.5	100.0
	2	Missing	
	-----	-----	
Total	964	100.0	

Valid cases 962 Missing cases 2

Question 44 - The quality of the item at your school -- Curriculum-specific courses:

Label	Frequency	Percent	Cum Percent
Very low	13	1.4	1.4
Low	29	3.0	4.4
Middle quality	112	11.7	16.0
High	450	46.8	62.9
Very high	357	37.1	100.0
	3	Missing	
	-----	-----	
Total	964	100.0	

Valid cases 961 Missing cases 3

Question 45 - The quality of the item at your school -- Elective courses:

Label	Frequency	Percent	Cum Percent
Very low	14	1.5	1.5
Low	30	3.2	4.6
Middle quality	202	21.3	25.9
High	400	42.1	68.1
Very high	303	31.9	100.0
	15	Missing	
	-----	-----	
Total	964	100.0	

Valid cases 949 Missing cases 15

Question 46 - The quality of the item at your school -- Faculty:

Label	Frequency	Percent	Cum Percent
Very low	11	1.1	1.1
Low	31	3.2	4.4
Middle quality	197	20.5	24.9
High	467	48.6	73.5
Very high	255	26.5	100.0
	3	Missing	
	-----	-----	
Total	964	100.0	

Valid cases 961 Missing cases 3

Question 47 - The quality of the item at your school -- Laboratories:

Label	Frequency	Percent	Cum Percent
Very low	22	2.4	2.4
Low	73	7.9	10.2
Middle quality	305	32.9	43.1
High	333	35.9	79.1
Very high	194	20.9	100.0
	37	Missing	
	-----	-----	
Total	964	100.0	

Valid cases 927 Missing cases 37

Question 48 - The quality of the item at your school -- Computer resources:

Label	Frequency	Percent	Cum Percent
Very low	18	1.9	1.9
Low	75	7.9	9.8
Middle quality	225	23.6	33.4
High	352	37.0	70.4
Very high	282	29.6	100.0
	12	Missing	
	-----	-----	
Total	964	100.0	

Valid cases 952 Missing cases 12

Question 49 - The quality of the item at your school -- Computer staff:

Label	Frequency	Percent	Cum Percent
Very low	25	2.6	2.6
Low	93	9.8	12.5
Middle quality	321	33.9	46.4
High	307	32.4	78.8
Very high	201	21.2	100.0
	17	Missing	
	-----	-----	
Total	964	100.0	

Valid cases 947 Missing cases 17

**Question 50 - The quality of the item at your school --
Library resources:**

Label	Frequency	Percent	Cum Percent
Very low	15	1.6	1.6
Low	42	4.4	6.0
Middle quality	184	19.2	25.2
High	373	39.0	64.2
Very high	342	35.8	100.0
	8	Missing	
	-----	-----	
Total	964	100.0	

Valid cases 956 Missing cases 8

**Question 51 - The quality of the item at your school --
Refresher courses:**

Label	Frequency	Percent	Cum Percent
Very low	56	6.3	6.3
Low	76	8.5	14.8
Middle quality	291	32.7	47.5
High	259	29.1	76.6
Very high	208	23.4	100.0
	74	Missing	
	-----	-----	
Total	964	100.0	

Valid cases 890 Missing cases 74

**Question 52 - The quality of the item at your school --
Personnel support (e.g., exchanges, family service):**

Label	Frequency	Percent	Cum Percent
Very low	62	6.5	6.5
Low	98	10.3	16.9
Middle quality	269	28.4	45.3
High	328	34.6	79.9
Very high	190	20.1	100.0
	17	Missing	
	-----	-----	
Total	964	100.0	

Valid cases 947 Missing cases 17

Question 53 - If you attended the Naval Postgraduate School, how much do you agree with -- An NPS education benefits an officer for the remainder of his/her career:

Label	Frequency	Percent	Cum Percent
Strongly disagree	20	2.6	2.6
Disagree	24	3.1	5.7
Neutral	94	12.2	17.9
Agree	214	27.7	45.5
Strongly agree	421	54.5	100.0
	191	Missing	
	-----	-----	
Total	964	100.0	

Valid cases 773 Missing cases 191

Question 54 - If you attended the Naval Postgraduate School, how much do you agree with -- The NPS curricula prepare an officer for assignments to DoD:

Label	Frequency	Percent	Cum Percent
Strongly disagree	24	3.1	3.1
Disagree	59	7.7	10.8
Neutral	180	23.4	34.2
Agree	290	37.7	71.9
Strongly agree	216	28.1	100.0
	195	Missing	
	-----	-----	
Total	964	100.0	

Valid cases 769 Missing cases 195

Question 55 - If you attended the Naval Postgraduate School, how much do you agree with -- NPS provides students with exposure and connectivity to DoD officials and organizations:

Label	Frequency	Percent	Cum Percent
Strongly disagree	41	5.3	5.3
Disagree	134	17.4	22.8
Neutral	247	32.1	54.9
Agree	217	28.2	83.1
Strongly agree	130	16.9	100.0
	195	Missing	
	-----	-----	
Total	964	100.0	

Valid cases 769 Missing cases 195

Question 56 - If you attended the Naval Postgraduate School, how much do you agree with -- My NPS education will increase the combat effectiveness of my military service:

Label	Frequency	Percent	Cum Percent
Strongly disagree	74	9.7	9.7
Disagree	101	13.2	22.9
Neutral	170	22.3	45.2
Agree	231	30.3	75.5
Strongly agree	187	24.5	100.0
	201	Missing	
	-----	-----	
Total	964	100.0	
Valid cases	763	Missing cases	201

Responses to Curricula questions

	Curriculum Studied		Preferred Curriculum		Curriculum Officers Should Study	
	N	%	N	%	N	%
Aeroelectronics	8	0.9	5	0.6	5	0.6
Anti-submarine Warfare	36	4.0	12	1.4	5	0.6
Behavioral Science	3	0.3	2	0.2	3	0.4
Biological Sciences	0	0.0	2	0.2	0	0.0
Chemistry	3	0.3	4	0.5	1	0.1
Computer Science	32	3.5	58	6.8	56	7.1
Criminal Law	5	0.6	7	0.8	5	0.6
Ecology	0	0.0	2	0.2	4	0.5
Economics	1	0.1	6	0.7	6	0.8
Education	16	1.8	13	1.5	6	0.8
Engineering, Acoustics	11	1.2	14	1.6	2	0.3
Engineering, Aeronautical	49	5.4	44	5.1	11	1.4
Engineering, Chemical	0	0.0	4	0.5	1	0.1
Engineering, Communications	13	1.4	15	1.7	13	1.7
Engineering, Electrical	59	6.5	67	7.8	49	6.2
Engineering, Hydrography	3	0.3	2	0.2	1	0.1
Engineering, Mgmt/Indust	10	1.1	18	2.1	28	3.6
Engineering, Mechanical	56	6.2	46	5.4	19	2.4
Engineering, Naval Construction	49	5.4	36	4.2	18	2.3
Engineering, Nuclear Power	1	0.1	4	0.5	1	0.1
Engineering, Ordnance	26	2.9	11	1.3	5	0.6
English	0	0.0	2	0.2	5	0.6
Intelligence	23	2.5	17	2.0	3	0.4
International Law	3	0.3	7	0.8	5	0.6
International Relations	24	2.7	33	3.8	39	5.0
Languages	0	0.0	3	0.3	5	0.6
Management, Business Administration	36	4.0	57	6.6	97	12.3

	Curriculum Studied		Preferred Curriculum		Curriculum Officers Should Study	
	N	%	N	%	N	%
Management, Communications	22	2.4	11	1.3	17	2.2
Management, Computer Systems	64	7.1	56	6.5	61	7.8
Management, Financial	79	8.7	71	8.3	67	8.5
Management, Personnel	41	4.5	18	2.1	25	3.2
Management, Petroleum	4	0.4	4	0.5	1	0.1
Management, Procurement	37	4.1	23	2.7	49	6.2
Management, Systems Inv.	11	1.2	8	0.9	5	0.6
Management, Transportation	13	1.4	13	1.5	6	0.8
Marketing	3	0.3	9	1.0	2	0.3
Material Science	8	0.9	3	0.3	3	0.4
Mathematics	2	0.2	9	1.0	2	0.3
Meteorology	12	1.3	8	0.9	2	0.3
Naval History	0	0.0	10	1.2	13	1.7
Oceanography	19	2.1	19	2.2	7	0.9
Ocean Law	2	0.2	3	0.3	0	0.0
Operations Research	59	6.5	45	5.2	80	10.2
Physics	22	2.4	16	1.9	9	1.1
Political Science	23	2.5	27	3.1	31	3.9
Public Relations	2	0.2	3	0.3	4	0.5
Psychology	0	0.0	1	0.1	1	0.1
Religion	10	1.1	6	0.7	5	0.6
Retailing	2	0.2	1	0.1	0	0.0
Social Science	0	0.0	2	0.2	2	0.3
Subsistence Technology	2	0.2	2	0.2	0	0.0
Taxation	0	0.0	0	0.0	1	0.1
Missing	60	-	105	-	178	-
Total	964	100.0	964	100.0	964	100.0

APPENDIX D

Question 37 To what extent did the school provide - Faculty knowledge of DoD	NPS <u>Graduates</u> Percent	CIVINS <u>Graduates</u> Percent	All <u>Respondents</u> Percent
To no extent	4.3	19.6	8.2
Very little extent	12.5	30.2	16.2
To some extent	22.6	23.6	22.3
Quite a bit	37.8	18.1	33.3
To a great extent	22.8	8.5	19.9
Total	100.0	100.0	100.0
Mean (1 to 5)	3.621	2.658	3.405

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Question 38 To what extent did the school provide - DoD- specific Publications	NPS <u>Graduates</u> Percent	CIVINS <u>Graduates</u> Percent	All <u>Respondents</u> Percent
To no extent	5.8	43.7	14.6
Very little extent	16.1	26.1	18.1
To some extent	28.0	14.6	24.9
Quite a bit	30.6	11.6	25.9
To a great extent	19.6	4.0	16.9
Total	100.0	100.0	100.0
Mean (1 to 5)	3.420	2.060	3.154

Question 39 To what extent did the school provide - DoD- oriented databases, etc.	NPS <u>Graduates</u> Percent	CIVINS <u>Graduates</u> Percent	All <u>Respondents</u> Percent
To no extent	5.9	45.5	14.8
Very little extent	13.0	27.0	15.5
To some extent	25.6	13.0	22.7
Quite a bit	30.1	9.0	25.2
To a great extent	25.4	5.5	21.7
Total	100.0	100.0	100.0
Mean (1 to 5)	3.560	2.020	3.235

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Question 40 To what extent did the school provide - DoD orientation of courses	NPS <u>Graduates</u> Percent	CIVINS <u>Graduates</u> Percent	All <u>Respondents</u> Percent
To no extent	5.7	44.0	14.5
Very little extent	14.2	26.5	16.5
To some extent	27.4	14.5	24.6
Quite a bit	30.7	9.0	25.7
To a great extent	22.1	6.0	18.7
Total	100.0	100.0	100.0
Mean (1 to 5)	3.493	2.065	3.175

Question 41 To what extent did the school provide - Support for DoD- oriented theses	<u>NPS</u> <u>Graduates</u> Percent	<u>CIVINS</u> <u>Graduates</u> Percent	<u>All</u> <u>Respondents</u> Percent
To no extent	4.2	23.0	8.4
Very little extent	7.6	15.5	9.2
To some extent	16.8	15.0	16.4
Quite a bit	30.3	25.0	29.1
To a great extent	41.2	21.5	36.8
Total	100.0	100.0	100.0
Mean (1 to 5)	3.966	3.065	3.768

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Question 42 To what extent did the school provide - An environment for shared knowledge	<u>NPS</u> <u>Graduates</u> Percent	<u>CIVINS</u> <u>Graduates</u> Percent	<u>All</u> <u>Respondents</u> Percent
To no extent	2.8	8.5	4.0
Very little extent	5.4	6.0	5.5
To some extent	13.9	13.1	13.9
Quite a bit	30.2	28.1	29.7
To a great extent	47.8	44.2	47.0
Total	100.0	100.0	100.0
Mean (1 to 5)	4.148	3.935	4.102

Question 43 Rate the quality of the item at your school - Core courses	NPS <u>Graduates</u> Percent	CIVINS <u>Graduates</u> Percent	All <u>Respondents</u> Percent
Very low	0.8	3.0	1.1
Low	4.4	4.0	4.5
Middle quality	22.4	16.1	20.9
High	49.9	39.7	47.0
Very High	22.5	40.2	26.5
Total	100.0	100.0	100.0
Mean (1 to 5)	3.889	4.070	3.932

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Question 44 Rate the quality of the item at your school - Curriculum-specific courses	NPS <u>Graduates</u> Percent	CIVINS <u>Graduates</u> Percent	All <u>Respondents</u> Percent
Very low	0.9	3.0	1.4
Low	2.7	3.5	3.0
Middle quality	12.3	10.1	11.7
High	50.3	35.7	46.8
Very High	33.8	47.7	37.1
Total	100.0	100.0	100.0
Mean (1 to 5)	4.132	4.216	4.154

Question 45 Rate the quality of the item at your school - Elective courses	<u>NPS</u> <u>Graduates</u> Percent	<u>CIVINS</u> <u>Graduates</u> Percent	<u>All</u> <u>Respondents</u> Percent
Very low	1.3	2.5	1.5
Low	3.5	1.5	3.2
Middle quality	23.2	16.6	21.3
High	45.3	30.7	42.1
Very High	26.7	48.7	31.9
Total	100.0	100.0	100.0
Mean (1 to 5)	3.926	4.216	3.999

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Question 46 Rate the quality of the item at your school - Faculty	<u>NPS</u> <u>Graduates</u> Percent	<u>CIVINS</u> <u>Graduates</u> Percent	<u>All</u> <u>Respondents</u> Percent
Very low	0.7	3.0	1.1
Low	3.3	2.5	3.2
Middle quality	22.3	15.7	20.5
High	51.0	37.4	48.6
Very High	22.8	41.4	26.5
Total	100.0	100.0	100.0
Mean (1 to 5)	3.920	4.116	3.961

Question 47 Rate the quality of the item at your school - Laboratories	NPS <u>Graduates</u> Percent	CIVINS <u>Graduates</u> Percent	All <u>Respondents</u> Percent
Very low	1.5	5.3	2.4
Low	8.7	4.8	7.9
Middle quality	33.2	29.8	32.9
High	38.4	28.2	35.9
Very High	18.1	31.9	20.9
Total	100.0	100.0	100.0
Mean (1 to 5)	3.630	3.766	3.652

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Question 48 Rate the quality of the item at your school - Computer resources	NPS <u>Graduates</u> Percent	CIVINS <u>Graduates</u> Percent	All <u>Respondents</u> Percent
Very low	1.4	3.6	1.9
Low	8.0	6.7	7.9
Middle quality	22.8	27.2	23.6
High	38.0	31.8	37.0
Very High	29.7	30.8	29.6
Total	100.0	100.0	100.0
Mean (1 to 5)	3.866	3.795	3.846

Question 49 Rate the quality of the item at your school - Computer staff	<u>NPS</u> <u>Graduates</u> Percent	<u>CIVINS</u> <u>Graduates</u> Percent	<u>All</u> <u>Respondents</u> Percent
Very low	2.1	4.1	2.6
Low	9.6	10.4	9.8
Middle quality	32.4	38.9	33.9
High	34.9	25.4	32.4
Very High	21.0	21.2	21.2
Total	100.0	100.0	100.0
Mean (1 to 5)	3.630	3.492	3.598

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Question 50 Rate the quality of the item at your school - Library resources	<u>NPS</u> <u>Graduates</u> Percent	<u>CIVINS</u> <u>Graduates</u> Percent	<u>All</u> <u>Respondents</u> Percent
Very low	1.2	3.1	1.6
Low	5.0	3.6	4.4
Middle quality	21.4	8.7	19.2
High	41.9	29.6	39.0
Very High	30.6	55.1	35.8
Total	100.0	100.0	100.0
Mean (1 to 5)	3.957	4.301	4.030

Question 51 Rate the quality of the item at your school - Refresher courses	NPS <u>Graduates</u> Percent	CIVINS <u>Graduates</u> Percent	All <u>Respondents</u> Percent
Very low	5.4	10.1	6.3
Low	7.4	11.2	8.5
Middle quality	32.7	32.0	32.7
High	31.1	23.6	29.1
Very High	23.3	23.0	23.4
Total	100.0	100.0	100.0
Mean (1 to 5)	3.595	3.382	3.547

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Question 52 Rate the quality of the item at your school - Personnel support	NPS <u>Graduates</u> Percent	CIVINS <u>Graduates</u> Percent	All <u>Respondents</u> Percent
Very low	1.8	24.1	6.5
Low	8.2	18.8	10.3
Middle quality	30.1	22.0	28.4
High	39.2	17.8	34.6
Very High	20.7	17.3	20.1
Total	100.0	100.0	100.0
Mean (1 to 5)	3.687	2.853	3.513

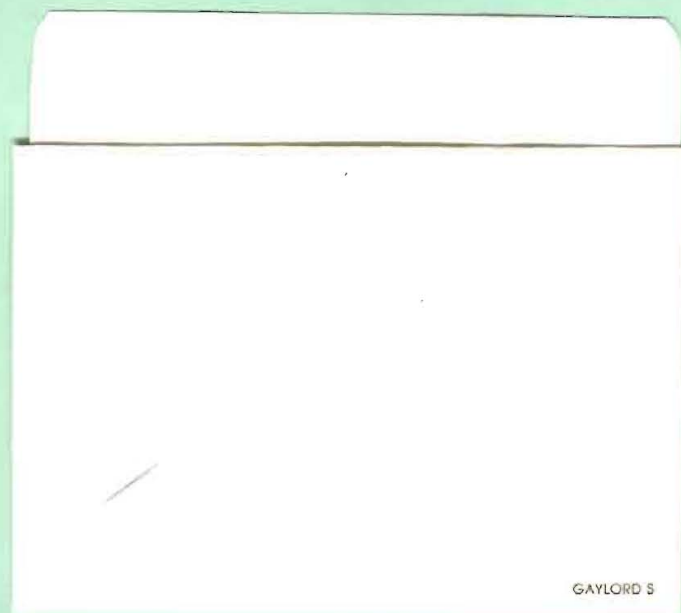
Questions 53 through 56 -- For NPS graduates only:
How strongly do you agree or disagree with the following statements?

Question 53 An NPS education benefits an officer for the remainder of his/her career	NPS <u>Graduates</u> Percent
Strongly disagree	2.6
Disagree	3.1
Neutral	12.2
Agree	27.7
Strongly agree	54.5
Total	100.0
Mean (1 to 5)	4.283

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Question 54 The NPS curricula prepare an officer for assignments to DoD	NPS <u>Graduates</u> Percent
Strongly disagree	3.1
Disagree	7.7
Neutral	23.4
Agree	37.7
Strongly agree	28.1
Total	100.0
Mean (1 to 5)	3.800

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